CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 6 **CX/FO 17/25/6**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FATS AND OILS

Twenty-fifth Session

Kuala Lumpur, Malaysia, 27 February- 03 March 2017

Proposed draft revision of the *Standard for Named Vegetable Oils* (CODEX STAN 210-1999): Addition of Palm Oil with High Oleic Acid (OxG))

(Prepared by the electronic working group led by Colombia and co-chaired by Ecuador)

(At Step 3)

Governments and interested international organizations are invited to submit comments on **the proposed draft revision to the standard as presented in Appendix I,** at Step 3, **by 6 January 2017**.

Comments should be submitted through the Codex online Commenting System (OCS): https://ocs.codexalimentarius.org/ as stipulated in CL 2016/44 – FO.

Background

1. At the 24th Session held in Melaka, Malaysia, the Codex Committee on Fats and Oils (CCFO), agreed to establish an electronic Working Group (EWG)[1] led by Colombia and co-chaired by Ecuador, open to all members and observers and working in English only, to prepare, subject to approval of the Commission, a proposed draft revision of the *Standard for Named Vegetable Oils* (CODEX STAN 210-1999), for circulation for comments at Step 3 and consideration at its next session.

Timeline of the Electronic Working Group:

2. The Electronic Working Group was established according to the Procedural Manual, 24nd edition (2015), Section III: Guidelines for Subsidiary Bodies – Guidelines on Electronic Working Groups (EWG) and worked between October 21, 2015 to June 15, 2016 with a 15-days extension expecting more comments from the countries that had enrolled to participate in the work (Appendix II).

Key observations and comments to the document by members:

3. Ecuador, Malaysia and the United States, sent comments and observations about the proposal. The main comments received are as summarized below:

a. The United States recommended that palm oil containing 48-58% oleic acid be called “Palm Oil - Mid Oleic Acid” not “Palm Oil - High Oleic Acid.”

b. Malaysia proposed a range of values for fatty acid composition from crude/raw vegetable oils determined by Gas-Liquid Chromatography - GLC from authentic/original samples (expressed as a percentage of total fatty acids); they also proposed a new range for iodine indexes considering the values of Malaysia’s oil. The unsaponifiable matter should be 12, and not 1, 2, and therefore the symbol less or equal (≤) should be placed before the value 12, to be consistent with other oils. They suggested removing the stable carbon isotope ratio, since there are no reference values and no parameters are included for other oils. Also the ranges for campesterol, stigmasterol and beta-sitosterol which start from ND are rather wide. In view of this, proposed to clarify whether these are the actual ranges observed. There should also be a range of values

[1] REP 15/FO, para 90

for the Total sterols. Finally they proposed that the tocopherol and tocotrienol levels must be presented with whole numbers (zero decimal), to be consistent with other oils.

c. Ecuador proposed to define a common name for this type of oil, to make it easier to be distinguished worldwide and to be differentiated from the palm oil. According to the data provided by the Ecuadorian industry, it was suggested to reduce the minimum limit of lauric (C12: 0) and myristic (C14: 0) acid from 0.11% to 0.04% and from 0.40 % to 0.35% respectively; otherwise the minimum should be eliminated and only the highest values should be maintained. Additionally, for the oleic acid (C18: 1) they suggested to increase the minimum content from 48% to 50%, thus in order to be differentiated from other oil types. They considered relevant that the total content of carotenoids in the palm oil high oleic acid must be at least of 800 mg/kg, which is the main characteristic that makes this oil different from palm oils without high oleic acid content. Finally, they proposed to increase the lower limit of iodine (from 60 to 64).

Conclusion and Recommendations

4. The comments provided by countries were analyzed and those considered applicable were incorporated in the proposed revision as presented in the Appendix I.

5. The eWG recommends that CCFO25 consider the proposed draft as presented in Appendix I.

APPENDIX I

Proposed revision to the *Standard for Named Vegetable Oils* (CODEX STAN 210-1999), Addition of Palm Oil with High Oleic Acid (OxG))

(At Step 3)

New texts added are shown in **bold/underlined** Font. Deletions are shown in ~~strikethrough~~ Font

2. DESCRIPTION

2.1 Product definitions

(Note: synonyms are in brackets immediately following the name of the oil)

Palm oil – high oleic acid (high oleic acid palm oil) is derived from the fleshy mesocarp of hybrid palm fruit OxG (*Elaeis oleifera* x *Elaeis guineensis*).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

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

Table 1: Fatty acid composition of vegetable oils as determined by gas liquid chromatography from authentic samples [1] (expressed as percentage of total fatty acids) (see Section 3.1 of the Standard)

Fatty acid	Palm oil high oleic acid
C6:0	ND
C8:0	ND
C10:0	ND
C12:0	ND – 0.4
C14:0	ND – 0.7
C16:0	25.0– 34.0
C16:1	ND – 0.8
C17:0	ND
C17:1	ND
C18:0	2.0 – 3.8
C18:1	48.0 – 58.0
C18:2	10.0 – 14.0
C18:3	ND – 0.6
C20:0	ND – 0.4
C20:1	ND
C20:2	ND
C22:0	ND
C22:1	ND
C22:2	ND
C24:0	ND
C24:1	ND

ND - non detectable, defined as ≤ 0.05%

[1] Data taken from species listed in Section 2.

Table 2: Chemical and physical characteristics of crude vegetable oils (see Appendix of the Standard)

	Palm oil high oleic acid
Relative density (x ºC/water at 20ºC)	**0.8957-0.910 (50 °C/water a 20 ºC)**
Apparent density (g/ml)	**ND**
Refractive index (ND 40ºC)	**1.459-1.462**
Saponification value (mg KOH/g oil)	**189-199**
Iodine value	**60-72**
Unsaponifiable matter (g/kg)	**≤12**
Stable carbon isotope ratio *	**-**

* For the method see the following publications:

- Woodbury SP, Evershed RP and Rossell JB (1998). Purity assessments of major vegetable oils based on gamma 13C values of individual fatty acids. JAOCS, 75 (3), 371-379.
- Woodbury SP, Evershed RP and Rossell JB (1998). Gamma 13C analysis of vegetable oil, fatty acid components, determined by gas chromatography-combustion-isotope ratio mass spectrometry, after saponification or regiospecific hydrolysis. Journal of Chromatography A, 805, 249-257.
- Woodbury SP, Evershed RP, Rossell JB, Griffith R and Farnell P (1995). Detection of vegetable oil adulteration using gas chromatography combustion / isotope ratio mass spectrometry. Analytical Chemistry 67 (15), 2685-2690.
- Ministry of Agriculture, Fisheries and Food (1996). Authenticity of single seed vegetable oils. Working Party on Food Authenticity, MAFF, UK.

Table 3: Levels of desmethylsterols in crude vegetable oils from authentic samples1 as a percentage of total sterols (see Appendix of the Standard)

	Palm oil high oleic acid
Cholesterol	**2.2-4.7**
Brassicasterol	**ND-0.4**
Campesterol	**16.6-21.9**
Stigmasterol	**11.5-15.5**
Beta-sitosterol	**57.2-60.9**
Delta-5-avenasterol	**1-1.9**
Delta-7-stigmastenol	**ND-0.2**
Delta-7-avenasterol	**ND-1.0**
Others	**ND-1.8**
Total sterols (mg/kg)	**519-1723**

ND - Non-detectable, defined as ≤ 0.05%

[1] Data taken from species listed in Section 2.

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

	Palm oil high oleic acid
Alpha-tocopherol	**128 - 152**
Beta-tocopherol	**ND**
Gamma-tocopherol	**4 - 138**
Delta-tocopherol	**0 - 31**
Alpha-tocotrienol	**165 - 179**
Gamma-tocotrienol	**475 - 586**
Delta-tocotrienol	**35 - 61**
Total (mg/kg)	**678 - 956**

ND - Non-detectable

[1] Data taken from species listed in Section 2.

APPENDIX II

ELECTRONIC WORKING GROUP ON CODEX/OIE COOPERATION

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