CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 5.1 **CRD09**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FATS AND OILS

Twenty-Sixth Session

Kuala Lumpur, Malaysia, 25 February- 01 March 2019

REVISED PROPOSED DRAFT AMENDMENT TO THE STANDARD FOR NAMED VEGETABLE OILS: ~~CHANGE IN THE TEMPERATURE FOR THE ANALYSIS OF REFRACTIVE INDEX AND APPARENT DENSITY OF PALM SUPEROLEIN~~ AMEND THE VALUES OF REFRACTIVE INDEX AND APPARENT DENSITY OF PALM SUPEROLEIN AT 40°C

(Prepared by Malaysia)

INTRODUCTION

1. Palm superolein is defined as the liquid fraction derived from palm oil produced through a specially controlled crystallization process to achieve an iodine value of 60 or higher[1]. It is characterized by a set of distinctive fatty acid composition (FAC) and physico-chemical properties that differentiate it from palm olein. The inclusion of palm superolein into the Codex Standard for Named Vegetable Oils (CODEX STAN 210:1999) was agreed at the 18th CCFO[2] and adopted at the 26th Codex Alimentarius Commission in 2003[3].

ISSUE

2. At present, the value of the refractive index (RI) of palm superolein in the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999) is in the range of 1.463-1.465, determined at an experimental temperature of 40°C. Recent interruptions to the global trade of palm superolein have occurred in which the RI values of traded palm superolein determined at 40 °C do not fall within the range as specified in the CODEX STAN 210:1999.

3. After a careful revision and cross-referencing of the RI range as stipulated in the CODEX STAN 210-1999 and data from recent analyses on palm superolein samples, current data shows that the determination of RI of palm superolein falls within the values specified in the CODEX STAN 210-1999 only when analysed at the experimental temperature of 30°C, and not at 40°C. Table 1 shows the data of RI of 26 palm superolein samples which Malaysia recently analysed at both 30°C and 40°C according to the method specified for the determination of RI in the CODEX STAN 210:1999. Similarly, as shown in Table 1, the values analysed for apparent density for palm superolein also fall within the values in the CODEX STAN 210:1999 when analysed at 30°C.

Table 1: Refractive index and apparent density of superolein samples analysed at 30°C and 40°C and comparison with Codex levels

Characteristics	30°C	40°C	Codex levels (at 40°C)
Refractive index	1.463-1.464	1.459-1.460	1.463-1.465
Apparent density, g/mL	0.904-0.907	0.886-0.900	0.897-0.920

4. Recent literature published on the RI values of palm superolein have also shown that the RI values of 32 palm superolein samples which fall within the values specified in the CODEX STAN 210:1999 was analysed

---

[1] Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999)
[2] ALINORM 03/17
[3] ALINORM 03/41

at 30°C. Similarly, the values for apparent density of palm superolein in the same publication analysed at 30°C also fall within the values as specified in the CODEX STAN 210:1999, as shown in Table 2:

Table 2: Refractive index of palm superolein in recent literature

Palm superolein	**30°C**	**Reference**
Refractive index	1.463 - 1.464	Gunstone (2011)[4]
Apparent density (g/mL)	0.9042 – 0.9054	

5. Due to the incorrect temperature specified for the determination of both RI and apparent density in the CODEX STAN 210:1999, this has caused trade difficulties attributed to the RI values not falling within the ranges as specified in the CODEX STAN 210:1999. It is imperative that the correct experimental temperature for the determination of these quality characteristics be specified in the Codex Standard to facilitate the trade of palm superolein and to harmonise national legislation with Codex standards.

REVISED PROPOSAL

6. At CCFO25, the proposal submitted by Malaysia as in CX/FO 17/25/CRD23 suggested to change the temperature of the analysis of RI and apparent density of palm superolein from 40°C to 30°C in Table 2 in the Appendix to the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999) to address the current impediment to the trade of palm superolein. Upon reviewing written comments[5] received from Members, based on reasons of laboratory practicality and to be consistent with the temperature specified for these analyses in the AOCS Official Method for RI, Malaysia proposes to maintain the temperature for the analysis of RI and apparent density of palm superolein at 40°C and to amend the values for RI and apparent density in the aforementioned Codex Standard.

7. Therefore, Malaysia submits this revised proposal for amending the values of RI and apparent density of palm superolein at 40°C in Table 2 in the Appendix to the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999).

RECOMMENDATION

8. The Committee is invited to consider the revised proposal to amend the values of RI and apparent density of palm superolein at 40°C in Table 2 in the Appendix to the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999).

9. The project document is attached as Appendix to this document.

[4] Gunstone, F. (Ed.). (2011). *Vegetable oils in food technology: composition, properties and uses*. John Wiley & Sons.

[5] CX/FO 19/26/5

APPENDIX

PROJECT DOCUMENT

PROPOSAL FOR NEW WORK TO AMEND THE VALUES FOR REFRACTIVE INDEX AND APPARENT DENSITY OF PALM SUPEROLEIN AT 40°C IN THE STANDARD FOR NAMED VEGETABLE OILS (CODEX STAN 210-1999)

1. Purpose and scope of the Standard

The purpose of the proposed new work is to amend the values for refractive index (RI) and apparent density of palm superolein at 40°C in Table 2 in the Appendix to the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999). This is to ensure that these values reflect the current quality criteria of palm superolein in the international trade so that they fall within the limits specified in the Standard.

2. Relevance and timeliness

Palm superolein is the liquid fraction derived from palm oil produced through a specially controlled crystallization process to achieve an iodine value of 60 or higher. It is characterized by a set of distinctive fatty acid composition (FAC) and physico-chemical properties that differentiate this oil from palm olein.

Malaysia is one of the main producers and exporters of palm superolein and produced more than 250,000 tonnes of palm superolein in 2018. The oil is exported to major importing countries such as Japan, Netherlands, Singapore, Canada and Australia as well as other parts of the world. Given the volume of palm superolein traded, it is essential that the quality parameters of palm superolein are reflected accurately in the Codex Standard to remove any barriers to the international trade of palm superolein.

RI is an important quality characteristic which is inherent to an oil or fat and is used in the identification of fats. It is also used to observe the progress of reactions in certain processes such as hydrogenation. At present, the values of RI and apparent density for palm superolein in CODEX STAN 210-1999 do not reflect the current quality specifications of palm superolein produced in Malaysia and traded worldwide. Recent interruptions to the global trade of palm superolein have occurred where RI values of traded palm superolein do not fall within the range specified in the Standard.

As Codex Standards are accepted internationally as the main reference for the protection of the health of consumers and to ensure fair practices in international food trade, it is essential that Codex consider amending the values for RI and apparent density of palm superolein at 40°C in the Appendix to the Standard for Named Vegetable Oils (CODEX STAN 210-1999) to reflect the quality of palm superolein currently traded and avoid any disruption to trade.

3. Main aspects that should be covered

The proposed new work is to amend the values for RI and apparent density of palm superolein at 40°C in Table 2 in the Appendix to the Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999).

4. An assessment against the criteria for the establishment of work priorities

Criteria applicable to commodities:

General Criterion

Consumer protection from the point of view of health, food safety, ensuring fair practices in the food trade and taking into account the identified needs of developing countries

There are already provisions in the Standard for Named Vegetable Oils (CODEX STAN 210-1999) to ensure consumer protection in terms of food safety and authenticity of these products. The new proposed amendments will serve to enhance international trade of palm superolein to ensure fairness and consistency in global practices.

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

In 2018, Malaysia produced more than 255,000 tonnes of palm superolein. Approximately 103,000 tonnes of palm superolein produced was exported to Japan, Netherlands, Singapore, Canada and Australia and others (Table 1). The volume of production of palm superolein is expected to increase in the future due to the current shift and demand from the world population for more nutritious and healthier oils.

Table 1 Exports of palm superolein by country in 2018

Country	Import Volume (tonnes)
Japan	34,000

Netherlands	31,400
Singapore	15,700
Canada	7,700
Australia	2,900
Others	11,300
Total	**103,000**

Source: Malaysian Palm Oil Board (unpublished reports)

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

The proposed amendment in the Standard for Named Vegetable Oils (CODEX STAN 210-1999) would facilitate in the harmonization of national legislations with international standards and thus reduce impediments to international trade of palm superolein.

c) International or regional market potential

At present, there is existing substantial trade volume of palm superolein and this trend is expected to increase further in the future.

d) Amenability of the commodity to standardization

The specification for RI for palm superolein is well established in global palm superolein trade. Therefore, the proposed amendments are suitable for standardization in the existing Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999) to reflect current quality of palm superolein traded internationally as well as to facilitate the harmonization of national legislations with international standards.

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

There are already provisions in the existing Standard for Named Vegetable Oils (CODEX STAN 210-1999) which cover the main consumer protection and trade issues. The proposed amendments will provide further improvement to the standard, in relation to the quality requirements to facilitate palm superolein trade internationally.

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

This item is not relevant to this proposal.

g) Work already undertaken by other international organizations in this field

There is no other known international organisation which have already undertaken this work.

5. Relevance to Codex strategic objectives

This amendment is consistent with the Strategic Plan of the Codex Alimentarius Commission 2014-2019 to establish international food standards in response to needs identified by Members.

6. Information on the relation between the proposal and other existing Codex documents

This proposal is an amendment to the existing Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999).

7. Identification of any requirement for and availability of expert scientific advice

No expert scientific advice from external bodies is necessary.

8. Identification of any need for technical input to the standard from external bodies so that this can be planned for:

No technical input to the standard from external bodies is necessary.

9. The proposed timeline for completion of the new work, including the start date, the proposed date for adoption at step 5, and the proposed date for adoption by the Commission

Utilizing the Codex Procedure for adoption at Step 5/8 (omitting Steps 6 and 7), the amendments can be effected by mid-2021.

- Approval as new work by the 42nd Session of the Codex Alimentarius Commission in 2019.
- Proposed draft amendment considered at Step 4 by the 27th Session of CCFO in 2021.
- Final adoption at Step 5/8 by the 44th Session of the Codex Alimentarius Commission in 2021.