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CODEX COMMITTEE ON FATS AND OILS

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PROPOSALS FOR NEW WORK

DISCUSSION PAPER - REVISION TO THE *STANDARD FOR NAMED VEGETABLE OILS* (CXS 210-1999) TO INCLUDE VIRGIN COCONUT OIL (VCO)

(Prepared by the Philippines)

Introduction

1. Virgin coconut oil (VCO), the purest form of coconut oil, is obtained by pressing the fresh meat of the coconut (*Cocos nucifera* L.). It is extracted by a mechanical process without chemical changes. The oil remains in its most natural form. In this form it retains the smell and taste of coconut as well as its high content of vitamin E, minerals and healthy medium chain fatty acids.

2. VCO has no trans-fatty acids and has a high level of lauric acids (about 50%). It is also low in polyunsaturated fatty acids (PFAs) compared to oils such as soy and groundnut oils. It is also used as food supplements and ingredient for special dietary uses.

3. The uniqueness of VCO among all other vegetable oils owes to its high lauric acid content which can be used by the body to make the same derivative monolaurin (a monoglyceride).

4. With the emergence of adulteration and strict food safety and quality requirements being implemented globally, Codex standards are developed for a certain commodity to provide common requirements with the ultimate goal of protecting consumer health and promotion of fair practices in food trade.

5. This discussion paper focuses on VCO. It sets out the rationale for possible new work in Codex on the inclusion of VCO in the *Standard for named vegetable oils* (CXS 210-1999), which would aim to set common food safety and quality requirements unique to VCO intended for human consumption. This certainly acknowledged the inclusion of virgin oils in CXS 210-1999, however, to have a full grasp of the specific characteristics of VCO to prevent adulterations and to provide basis for authenticity parameter, this proposal is hereby recommended.

What is virgin coconut oil?

6. VCO is a clear, and colorless oil. It mainly consists of triglycerides with a composition that is predominantly (63%) saturated medium chain fatty acids (C6:0-C12:0) and stable to oxidation even when exposed to high temperatures. The fatty acid composition of VCO is distinct from animal fats, which are composed mainly of long chain fatty acids. Below 25 ºC, VCO solidifies and becomes white.

7. VCO is obtained from the fresh, mature kernel of the coconut by mechanical or physical extraction or natural means, with or without the use of heat, without undergoing chemical refining, bleaching or deodorizing, and which does not lead to the alteration of the nature of the oil. VCO is an oil which is suitable for consumption without the need for further processing.

8. In the Philippines, VCO is produced commercially using three methods: natural fermentation, expeller, and centrifuge. The natural fermentation method depends on the action of naturally occurring bacteria and endogenous coconut enzymes in coconut milk to separate the oil. The expeller method uses a mechanical screw to squeeze out the oil at high pressure. The centrifuge method is a technique to separate the oil from coconut milk using the rotational force of a centrifuge.

The global virgin coconut oil market

Global trade dynamics

9. Asia Pacific accounts for the largest global revenue share in the VCO market as the region is home to major coconut-producing countries like the Philippines and Indonesia, ensuring a steady supply of raw materials. This region specifically Philippines and India is the largest contributor in terms of both production and consumption (market share of 39.37% in 2023).

10. VCO is the Philippines' 2nd top non-traditional coconut product export with coconut water being the 1st and coco coir or fiber in third. According to the United Coconut Association of the Philippines (UCAP), the country's export of VCO totaled to 36,331 MT during the calendar year 2015. The shipment was worth USD 151.745 million. In 2016, the global organic VCO market was valued at approximately USD 685 million.

11. The VCO market in the Philippines initiated its foreign trade in 2013 and buoyed up in 2014 to 2015 (Philippine Statistics Authority, 2020) and gained steady export momentum in 2019 (Trade and Market Development Department [TMDD]-Philippine Coconut Authority [PCA], 2019). The Philippines' export of VCO in 2023 went to 51 countries. The top importer was the United States of America (USA) with 62.0% share, followed by the People's Republic of China (7.0%), Germany (6.0%), the United Kingdom (UK) (5.0%), Canada (4.0%), Australia (3.0%), Mexico (2.0%), the Netherlands (2.0%,) New Zealand / Taiwan Province of China (each with 1.0%). Other countries comprised about 7.0% share.

Market projections / Growth

12. The global VCO market is projected to continue its growth trajectory, with a Compound Annual Growth Rate (CAGR) of around 5.5% between 2022 and 2027, reaching a value of USD 7.4 billion.

13. In 2023, the global market size of VCO was USD 2.54 billion. It is projected to grow from USD 2.72 billion in 2024 to USD 5.17 billion in 2032 at a CAGR of 8.33% over 2024 to 2032. Asia Pacific dominated the virgin coconut oil market with a market share of 39.37% in 2023. Moreover, the virgin coconut oil market size in USA is projected to grow significantly, reaching an estimated value of USD 792.29 million by 2032, driven by growing import of the product by the country due to favorable trade policies and growing demand for coconut products.

14. Increasing health consciousness among consumers has significantly driven the growth of the market due to numerous health benefits associated with VCO. Preliminary Philippine local study showed that intake of VCO reduced triglycerides and very low density lipoprotein (VLDL, bad cholesterol) and an increased in the good cholesterol, the high density lipoprotein (HDL) (Research Center for the Natural and Applied Sciences, the University of Santo Tomas, 2012).

Rationale

15. The *Standard for named vegetable oils* (CXS 210-1999), though revisited and revised a couple of times, still has to improve and amend to suit every generation. Relevant data is needed to conform with the challenges of trade and consumption.

16. VCO, a growing commodity that has inked itself in the global market, must be mentioned explicitly in the standard. Challenges like adulterations, low quality and storage / packaging details are the most crucial. Its high demand can lead to adulteration or it being mixed with other oils to increase volume and reduce costs.

17. Few indications on the standard parameters of VCO in CXS 210-1999 are limitedly described and this eventually affects the trade of VCO in the international market. There are quality characteristics that are often inherent to certain vegetable oils and these are based on the oils being crude. Additional essential and identity characteristics must be incorporated to ensure better quality of VCO. Besides the fatty acid composition, inclusion of the Spectrophotometric measurement, absorbance at 278nm is recommended to determine any adulterations of virgin coconut oil. Other parameters that can be considered is the sterol profile which is specific for virgin coconut oil, not crude oil.

18. The International Coconut Community (ICC), formerly known as the Asia Pacific Coconut Countries (APCC) has developed standards for VCO. ICC is an intergovernmental organization of coconut producing countries and has 21 coconut producing member countries including eight Asian countries (India, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, Timor Leste and Vietnam); nine Pacific countries (Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu); one Caribbean country (Jamaica); two African countries (Côte d'Ivoire and Kenya); and one country in South America (Guyana). The standards contain parameters and identity characteristics of VCO to differentiate it from crude coconut oil and coconut cooking oil.

19. The Philippine National Standard for VCO (PNS/BAFPS 22:2007) has three groups of parameters – identity characteristics, quality characteristics, and contaminant limits. It has only one identity characteristic –

the % fatty acid composition, which is based mainly on CXS 210-1999. However, because the fatty acid composition does not distinguish VCO from refined, bleached, and deodorized coconut oil (RBDCO), additional methods are needed to differentiate VCO and RBDCO and to detect adulteration.

20. The Philippine Department of Agriculture (DA)-Bureau of Agriculture and Fisheries Standards (BAFS) developed the Philippine National Standard (PNS) for VCO (PNS/BAFPS 22:2004). The standard was subsequently revised by the DA-Philippine Coconut Authority (PCA) and Department of Health (DOH)-Food and Drug Administration (FDA) as PNS VCO for Human Consumption (PNS/FDA 42:2022). The inclusion of VCO in the current CXS 210-1999 is envisioned to contribute to the United Nations Sustainable Development Goal (UNSDG) No. 3 on the Good Health and Well-being. Its inclusion in the standard aims to assist those who are engaged in VCO production and ensuring the quality and safety of VCO products distributed locally and exported globally.

21. In view of harmonizing the national standards of different ICC member countries, there is a need to develop a common international standard that would have a wide coverage, such as one that is under Codex, to achieve its purpose of fair trade and high-quality food product. Further, with the emergence of adulteration and strict food safety requirements imposed by member countries, adherence to a guidance from Codex standards will facilitate international trade and market access. Thus, a Codex standard or at least inclusion of VCO should be provided.

Recommendation

22. CCFO29 is invited to consider and forward the project document (Appendix I) to CAC49 for approval of new work on the revision to the provisions for coconut oil in the *Standard for named vegetable oils* (CXS 210-1999) to provide clarity on the requirements for virgin coconut oil.

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Appendix I

PROPOSAL FOR NEW WORK - REVISION TO THE *STANDARD FOR NAMED VEGETABLE OILS* (CXS 210-1999) TO INCLUDE VIRGIN COCONUT OIL (VCO)

PROJECT DOCUMENT

(Submitted by Philippines)

1. Purpose and scope of the standard

The purpose of the work is to revise the provision for coconut oil and include provisions specific to virgin coconut oil (VCO) produced from *Cocos nucifera* L. intended for human consumption in the *Standard for named vegetable oils* (CXS 210-1999). These provisions will include essential identity and quality characteristics, contaminants, and methods of analysis.

The inclusion of these essential identity and quality characteristics will enhance the compliance to its authenticity. These characteristics can be the basis to determine that VCO is not adulterated.

2. Its relevance and timeliness

VCO is now considered a global product because of its benefits and functional characteristics. VCO is a rich source of medium-chain-triglycerides (MCT) which are beneficial for human health and nutrition. 63% of the oil is composed of antimicrobial medium-chain fatty acids and therefore VCO can assist the immune system in fighting against microscopic invades. VCO is expected to experience high demand from consumers with higher health consciousness and an aging population. Market players in the global market have been looking for opportunities to expand the services and product lines that include VCO. The global VCO market is projected to grow from $2.24 billion in 2021 to $3.69 billion in 2028 at a compound annual growth rate (CAGR) of 7.35% in the forecast period 2021-2028.

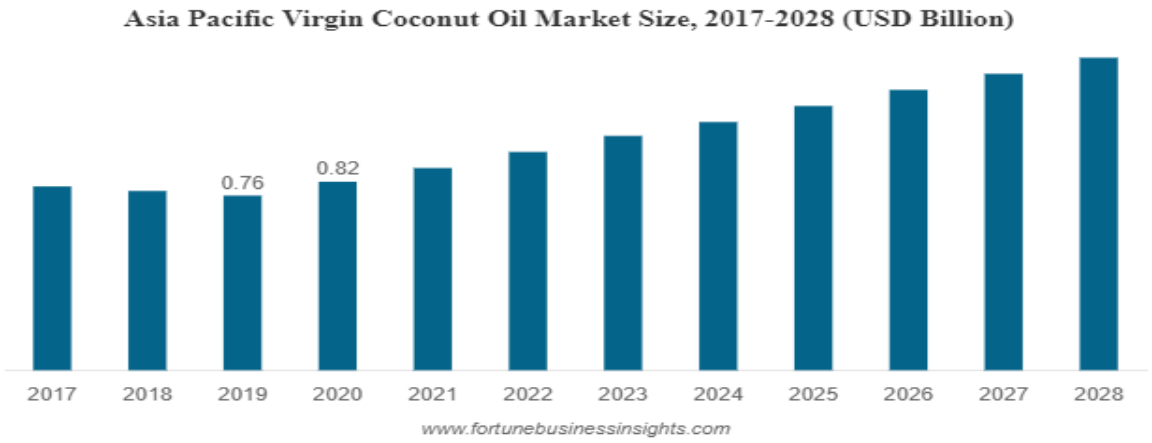

Figure 1. Projected Asia Pacific virgin coconut oil market size, 2017-2028 (USD Billion) (www.fortunebusinessinsights.com)

The projected VCO market in Asia Pacific shows a steady increase until 2028. With this indication, this industry must be protected from any negative issues that may affect its market performance.

3. The main aspects to be covered

The new work intends to include the standard parameters specific for VCO in the *Standard for named vegetable oils* (CXS 210-1999). The new work will stipulate the essential identity and quality characteristics, contaminants, and methods of analysis unique to VCO and in particular the following provisions:

- Essential composition – Table 1
- Methods of analysis and sampling, noting that this will be included CXS 234-1999 instead of CXS 210-1999, upon endorsement by the Codex Committee on Methods of Analysis and Sampling (CCMAS)
- Appendix in relation to:
  a) Identity characteristics
  b) Quality characteristics for the provisions on matter volatile at 105 ºC; soap content; acid value for cold pressed virgin oils; peroxide value for cold pressed virgin oils; colour; solidification at 25 ºC; Moisture, w/w maximum; and Free Fatty acids (as lauric acid), maximum.

4. An assessment against Section 2: Criteria for establishment of work priorities

4.1 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

Increasing health consciousness among consumers has significantly driven the growth of the market due to numerous health benefits associated with VCO. With the emergence of adulteration and strict food safety requirements imposed by member countries, adherence to a guidance provided by a Codex standard will facilitate international trade and market access. An international Codex standard would help in harmonizing the national standards of different countries, to achieve its purpose of fair trade and consumer protection.

4.2 Criteria applicable to commodities

4.2.1 Volume of production and consumption in individual countries and volume and pattern of trade between countries

The Philippines is the major supplier of VCO to the global market (VCO Market Size, Share and Industry Analysis; Regional Forecast 2024-2032, Fortune Business Insights, 2025). Malaysia and Thailand are also fast moving in product development. The other countries entered into VCO production are Sri Lanka, India, Bangladesh, Indonesia, Papua New Guinea, Vietnam and the Pacific Islands (Sarian, 2007).

In details, among the top coconut oil exporting nations globally along with the Philippines and Malaysia, Indonesia is the major producer and exporter of VCO, with exports reaching 371.85 thousand tons valued at USD 396.70M in 2023. In other countries like India, the demand and export of VCO are increasing due to its perceived health benefits and use of various products. Vietnam is also a significant VCO exporter. Fiji and Sri Lanka are coming from behind with a considerable volume of export to US, Germany and Australia.

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

The member countries of International Coconut Community (ICC) have developed their own standards for VCO. The standards contain parameters and identity characteristics of VCO to differentiate it from crude coconut oil and coconut cooking oil. Similarly, the Philippines has its own national standard for VCO which specifies the characteristics and properties for VCO for human consumption. In view of harmonizing the national standards of different ICC member countries, there is a need to develop a common international standard, such as Codex, to achieve its purpose of fair trade and high-quality food product.

Concern on adulterations of Philippine VCO is echoing from among international countries like Canada. Recently, the Philippine National Standard for VCO (PNS) was revisited and revised according to relevant issues specifically on its authenticity. With this, the Philippines is impressed to elevate this to Codex since Codex standards have become the threshold for standards of most of the commodities.

Further, strict food safety requirements imposed by member countries due to the emergence of adulteration pose as a challenge for international trade and market access. For instance, the Philippines through the DA-PCA issued Administrative Order 01 series of 2015 on Implementing Rules and Regulations to Enforce Standards in the Production and Marketing of Virgin coconut oil. To emphasize again, the Philippine Coconut Authority together with the Food and Drug Administration through the Bureau of Product Standards (BPS) of the Department of Trade and Industry issued the amended Philippine National Standard (PNS) for VCO for Human Consumption, PNS/ FDA 422:2022.

4.2.3 International or regional market potential

The market in North America is likely to exhibit impressive growth in the forthcoming years due to growing demand for nutritional supplements to support overall health. Furthermore, according to the latest trade statistics of the International Trade Centre (ITC), in 2021, VCO remains among the top three products imported by the United States of America (USA) from the Philippines in the past three consecutive years. The increase in demand for coconut products is largely based on positive changes related to the USA new trade policies, market trends, and dietary guidelines related to the coconut industry. According to the United Nations (UN) Commodity Trade Statistics (UN Comtrade), the USA imported approximately 291,586 tons of VCO in 2021, an increase of 12% from 2020.

Moreover, South America is expected to witness substantial growth as consumers in the region are still becoming aware of the health benefits and the oil's ability to fight obesity and other health issues. As Brazil is among the prominent producers of coconut across the world, it offers abundant raw material availability for VCO manufacturers, which is expected to offer growth opportunities for the market. Furthermore, the demand for healthy edible oils is growing in the Middle East and Africa, owing to increasing urbanization and adoption of Westernized culture. This has influenced the government to note the harmful effects of trans fats, which is anticipated to promote VCO consumption in the region.

Apart from the USA, other countries demanding VCO are Australia and Canada. In the Philippines, the export market for VCO expanded to 14 countries in 2005 from eight in 2004 and USA accounted for 93.5% of the

total. Other markets include Australia, Japan, Malaysia, the Netherlands, the Republic of Korea, Singapore, and South Africa. (Anon, 2007a). New markets are in Canada, Germany, Hong Kong S.A.R, Ireland, New Zealand, Saudi Arabia, Sweden, and United Kingdom (UK) (Anon, 2007a).

4.2.4 Amenability of the commodity to standardization

The inclusion of the indicated characteristics and properties specific for VCO is very timely and relevant. Furthermore, its standardization is amenable and appropriate knowing that food safety and food adulteration issues are of much concern that can affect the international trade. VCO is amenable to inclusion in CXS 210-1999, as many of its characteristics are identical to those of coconut oil which is already in the standard.

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

There are no existing Codex standards for essential food safety and quality parameters for VCO, specifically to determine adulterations. CXS 210-1999 contains identity and quality parameters specific to crude oils but provides limited provisions on virgin oils such as virgin coconut oil.

As indicated above, the development of a Codex standard that includes VCO will enhance consumer protection by discouraging deceptive practices due to adulteration.

4.2.6 Number of commodities which would need separate standards indicating whether raw, semi-processed or processed

This standard will cover VCO produced from *Cocos nucifera* L. intended for human consumption.

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

International Coconut Community (ICC) standard for Virgin Coconut Oil (VCO), https://coconutcommunity.org/products-detail/virgin-coconut-oil#snav-content3

5. Relevance to the Codex strategic objectives

Recently adopted by CAC47 are the strategic goals under the Codex Strategic Plan 2026-2031. This proposal for new work relates to the following goals:

Strategic Goal 1: Respond to Members' needs for protecting the health of consumers and ensuring fair practices in the food trade in an evolving global landscape by developing science-based standards and related texts

One of the Philippines' export commodities, virgin coconut oil (VCO), has been challenged in terms of its adulterations. This proposal aims to address this concern, and it is assumed that other Member countries who produce virgin coconut oil will also benefit.

This proposed new concerns essential and identity characteristics and properties that are based on a recently concluded scientific study. It will address the current adulteration issues of VCO and the additional identity characteristics will become the authenticity parameters (aside from the sterol profile which some of the member countries have been employing on their imported VCO).

Strategic Goal 2: Enhance Codex work management systems and practices that support the effective and efficient development of standards and related text

Through this proposal for new work, Member countries are encouraged to prepare related proposals and have them defend and let others participate to have a healthy and active discussion on the issue.

Strategic Goal 3: Strengthen relationships with relevant international organizations, promoting a coordinated approach to address global challenges

The proposal for new work will enhance collaborations among member countries and other international organizations like the International Coconut Community (ICC) thus strengthens relationships in terms of social and scientific knowledge.

Strategic Goal 4: Maximize the impact of Codex by increasing the visibility and use of standards

Codex standards for commodities and codes of practices have been widely used and adopted by nearly all Member and non-member countries. These standards often become the basis of technical regulations of these countries. These standards whether to be used as basis of technical regulations or as a referential standard for food safety will fortify the well-being of the citizen and improve the trade / market relations among countries.

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

The proposal related to the revision to the provisions specific to VCO will be included in the *Standard for named vegetable oils* (CXS 210-1999) after they have been adopted by CAC.

Other Codex standards like the *General standard for food additives* (CXS 192-1995), *General standard for contaminants and toxins in food and feed* (CXS 193-1995), *General standard for labelling of pre-packaged foods* (CXS- 1-1985) and *Recommended methods of analysis and sampling* (CXS 234-1999), among others will be considered during this work.

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

There is no expert scientific advice has been identified at this stage.

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

There is no identified need for technical input from external bodies at this point. Coordination with other scientific bodies or partner organizations will be considered, as necessary.

9. Proposed timeline for completion of the new work

This work is expected to be completed within two sessions of the committee to which the work will be assigned.