



# Standards & Conformance

Coconut oil VSS

# Questions to answer

- What national & regional standard is there to support coconut oil VSS?
- What steps have already been taken to develop coconut oil VSS?

# 1. What national & regional standards is there to support coconut oil VSS

- Nationally – there are none
  - Commencing work on this, this year
- Regionally
  - the [Asian Pacific Coconut Community \(APCC\) Virgin Coconut Oil Standards](#)
- Internationally
  - Codex General Principles of Food Hygiene
  - Codex General Standard for the Labelling of Pre-Packaged Foods
  - Codex Methods of Analysis and Sampling

# APCC STANDARDS FOR VIRGIN COCONUT OIL

## 1. Scope

This Standard applies for Virgin Coconut Oil (VCO).

## 1. References

- SNI (Indonesia National Standard) 7381:2008
- PNS (Philippine National Standard)/BAFPS 22:2007: ICS 67.200.10
- MS (Malaysian Standard) 2043:2007
- TCS (Thailand Coconut Community Standard) 670-2004
- APCC Standard for Virgin Coconut Oil

## 2. Definition

### 3.1. Virgin Coconut Oil

Virgin coconut oil (VCO) is obtained from fresh and mature kernel (12 months old from pollination) of the coconut (*Cocos nucifera L.*) by mechanical or natural means with or without the application of heat, which does not lead to alteration of the nature of the oil. VCO has not undergone chemical refining, bleaching or deodorizing. It can be consumed in its natural state without the need for further processing. Virgin coconut oil consists mainly of medium chain tryglycerides, which are resistant to peroxidation. The fatty acids in virgin coconut oil are distinct from animal fats which contain mainly of long chain saturated fatty acids. Virgin coconut oil is colorless, free of sediment with natural fresh coconut scent. It is free from rancid odor or taste.

## 4. Essential Composition and Quality Factors of Virgin Coconut Oil

Parameter	
Moisture (%)	Max 0.1
Matters Volatile at 120 <sup>0</sup> C (%)	Max 0.2
Free Fatty Acid (%)	Max 0.2
Peroxide Value meq/kg	Max 3
Relative density	0.915 – 0.920
Refractive index at 40 <sup>0</sup> C	1.4480 – 1.4492
Insoluble impurities per cent by mass	Max 0.05
Saponification Value	250 – 260 min
Iodine Value	4.1 -11
Unsaponifiable matter % by mass, max	0.2 - 0.5
Specific gravity at 30 deg./30 deg. C	0.915 – 0.920
Polenske Value, min	13
Total Plate Count	< 0.5
Color	Water clean
Odor and Taste	Natural fresh coconut scent, free of sediment, free from rancid odor and taste

## 5. Food Additives

None permitted

## 6. Contaminants

Parameter	Mg/kg
Iron (Fe)	Max 5
Copper (Cu)	Max 0.4
Lead (Pb)	Max 0.1
Arsenic (As)	Max 0.1

## 7. Gas Liquid Chromatography (GLC) ranges of Fatty Acid Component

Common name	Composition	(%)
Caproic acid	C 6:0	0.10 – 0.95
Caprylic acid	C 8:0	4 – 10
Capric acid	C 10:0	4 – 8
Lauric acid	C 12:0	45 – 56
Myristic acid	C 14:0	16 – 21
Palmitic acid	C 16:0	7.5 – 10.2
Stearic acid	C 18:0	2 – 4
Oleic acid	C 18:1	4.5 - 10
Linoleic acid	C 18:2	0.7 – 2.5

## 8. Hygiene

It is recommended that the product covered by the provisions of this standard shall be in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the CODEX Alimentarius Commission (CAC/RCP 1-1969, Rev. 4-2003).

## 9. Labelling and Packaging

The name of the food on the label shall be “Virgin Coconut Oil”. The provisions of the General Standard for the labelling of Pre-packaged Foods (CODEX STAN 1 – 1985, Rev. 6 - 2008) shall apply.

## 10. Methods of Analysis and Sampling

Based on Codex Alimentarius (Volume 13).

# 1. What Steps have already been taken to develop Coconut oil VSS?

- Some initial consultations training were conducted in 2018 and 2019
  - Pentecost, Ambae and Emae
  - Development of workshop materials:
    - How to make quality VCO
    - How to verify quality VCO
    - Keeping records of VCO production
- No further consultations conducted due to funding issues at the time
- In 2021-current time
  - Small amount of funding secured with EDF11 funding to commence work on VCO Standards

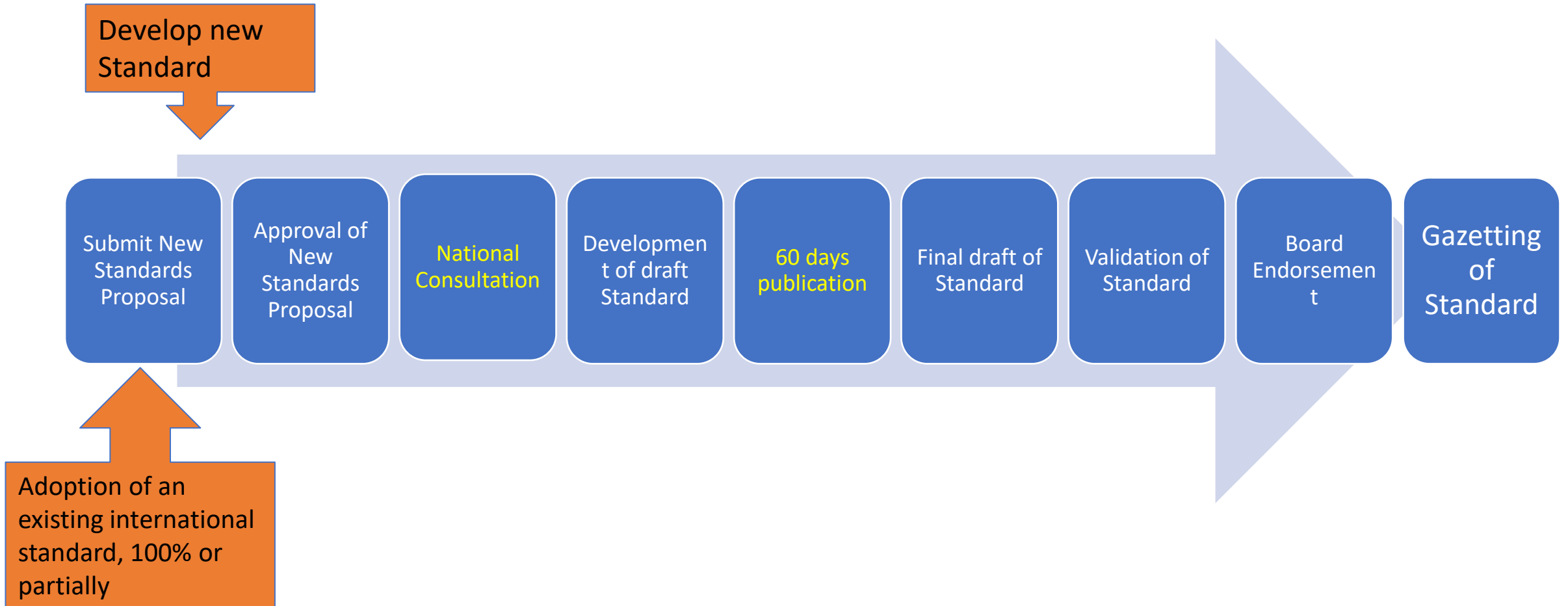
## 2. What Steps have already been taken to develop Coconut oil VSS? (Continued)

- Under the VBS Copra Quality Project
  - 2021- funded the Organic Certification of 1000 coconut farmers
- VBS laboratory is able to conduct the following tests for coconut oil
  - Moisture, Free fatty acid, refractive index, color, odour and taste, microbial test
- Heavily subsidized analysis fees (80:20) to encourage local VCO producers to test the quality of oil prior to selling.

# VCO quality test

- At community level
  - Physical Test: oil color, smell and taste
- In the laboratory
  - Chemical test:
    - pH, moisture
  - Microbial test: (VT1500/test)
    - Total plate count
    - E. coli
    - Salmonella
    - Listeria
- VCO quality Tests conducted
  - 2013 – 2018 - 32 tests
  - 2019 – current - < 5 tests/year
- Low test numbers due to:
  - Cost of tests
  - Low demand for VCO

# Standards development process





# Non Tariff measures

- Time taken for the development of Standards
- Technical Regulations requiring compliance to certain quality measures.
  - Eg. Food Regulation
- Market requirements demanding certain level of quality which may hinder trade
  - Eg. Food Safety certifications, Organic certification
- Cost of certification
  - Demand for test recognition by accredited laboratories
  - Audit conducted by third party certification/accreditation body
- Market requirements recognizing certain quality test methods that can only be conducted in another country thereby increasing costs.

Thank you for listening!  
Any questions?