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CODEX COMMITTEE ON FATS AND OILS

Twenty-Seventh Session

Virtual, 18 – 22 October 2021 and 26 October 2021

PROPOSALS FOR NEW WORK

(Replies to CL 2019/54-FO)

PART III - AMENDMENT/REVISION TO THE CODEX STANDARD FOR NAMED VEGETABLE OILS (CXS 210-1999) - INCLUSION OF SACHA INCHI OIL

DISCUSSION PAPER

(Submitted by Peru)

Codex Members and Observers wishing to submit comments on this **project document for new work on the inclusion of *sacha inchi* oil in Appendix I of the Standard for named vegetable oils (CXS 210-1999)** should do so as instructed in CL 2021/36/OCS-FO, available on the Codex webpage/Circular Letters 2021: <http://www.fao.org/fao-who-codexalimentarius/resources/circular-letters/en/>

1. Codex Alimentarius issued CL 2019/54-FO, Request for proposals for new work and/or amendments to existing Codex Standards, inviting Codex members to submit proposals for new work including amendments to existing CCFO texts.
2. The reply to this CL must include a discussion paper and a project document proposal.
3. In this regard, Peru would like to submit the following proposal for new work: Proposed Draft Revision to the Standard for Named Vegetable Oils (CODEX STAN 210-1999): Inclusion of *sacha inchi* oil.

Sacha inchi

4. *Sacha inchi* has been briefly described by various researchers and historians. Of particular note are references to it by Santiago Antúnez de Mayolo, the most prominent scholar on nutrition in ancient Peru, currently hailed as its “rediscoverer” due to his research.
5. This plant, like other oilseeds such as peanut, soybean, sunflower and cotton, can be used almost in its entirety. Its seeds (roasted or boiled, whole or as a paste or meal) and the oils extracted from them are consumed, whereas its leaves (raw or cooked) are also used and consumed alone and/or in combination for food, medicinal and personal care purposes. This plant is so important that it is considered by many as “Cultural Heritage of the Peruvian Amazonia”. Its traditional use is widespread among different Amazonian ethnic groups, mainly the Mayoruna, Mayruna Arabela, Chahuahuita, Asháninca, Asháninca Campa, Yahua, Secoya, Candoshi, Yanasha, Cashibo, Depanahua, Bora, Sharanahua, Yanasha Arahua, Aguaruna, Arabela, Chahuahuita, Shipibo-Conibo, Huitoto, Marui, Campa del Gran Pajonal, Machiguenga, Campaahaninca, Mayoruna, Quechua de San Martín, Quechua del Tigre Yahuas, Cocama-Cocamillas, Chahuahitas and Amueshas.
6. *Sacha inchi* is known by various denominations in different languages, dialects and geographical locations where it is grown and consumed, and each name also has different meanings: *sacha inchi*, *sacha inchik*, *amui-o*, *manichu monte*, *sacha yuchi*, *sacha yuchiqui*, *sampannankii*, *suwaa*, *maní del monte* and/or *maní silvestre*. For example, in the San Martín Region, “*sacha*” = forest, and “*inchik*” = peanut.

1 Product description:**Sacha inchi oil:**

7. Is the oil derived from cold pressed sacha inchi (*Plukenetia volubilis* L.) seeds and filtered by mechanical means.

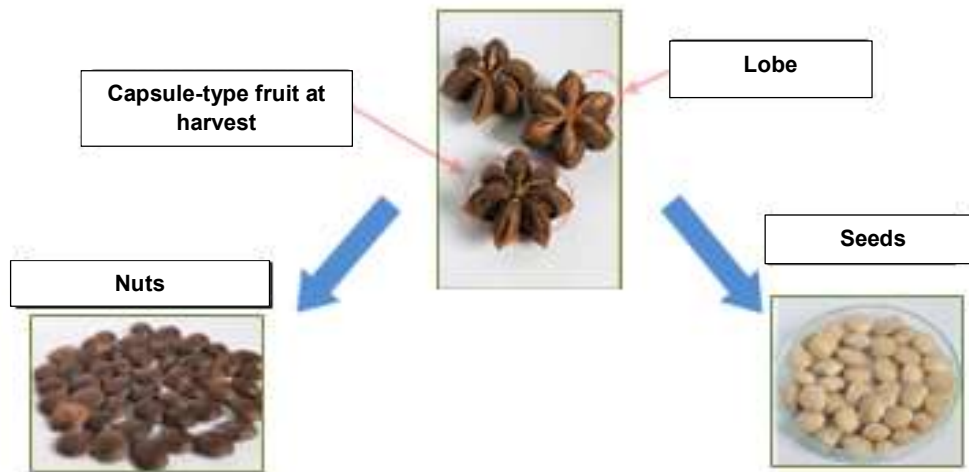


Figure 1 - Main parts of the *Plukenetia volubilis* L. species fruit

2 Sacha inchi oil nutritional composition

Table 1 – Physicochemical requirements for sacha inchi oil

Requirements	Minimum	Maximum
Density at 20°C (determination of volumetric mass at 20°C) (g/cm ³)	0.92	0.93
Iodine value (Hanus solution) (g/100g)	182.00	199.00
Saponification value (mg KOH/g)	189.00	196.00
Refractive index at 20°C	1.4780	1.4820
Unsaponifiable matter (%)		max. 0.5
Free acidity expressed as oleic acid (%): Extra virgin oil Virgin oil	Under 1.0	2.00
Peroxide value, milliequivalents of oxygen/kg oil	-	Not higher than 10
Moisture and volatile matter (%)	0.01	0.06
Insoluble impurities (%)	-	Under 0.01

Table 2 – Content of other sacha inchi oil nutrients










Requirement	Not lower than (mg/kg)	Not higher than (mg/kg)
Alpha-tocopherol	6.0	7.0
Beta-tocopherol	1.8	2.9
Gamma - tocopherol	1 108.0	1 367.0
Delta - tocopherol	641.0	856.0

Table 3 – Nutritional requirements: Sacha inchi oil fatty acids profile

Fatty acid	Lower limit (%)	Upper limit (%)
Palmitic acid (C16:0)	3.70	4.40
Stearic acid (C18:0)	2.57	3.20
Oleic acid (C18:1 n-9)	8.50	10.50
Vaccenic acid (C18:1 t-11)	-	0.56
Linoleic acid (C18:2 n-6)	32.00	38.00
Linolenic acid (C18:3 n-3)	42.00	48.00
Eicosanoic acid (C20:1)	-	0.30
Arachidic acid (C20:0)	-	0.10
Erucic acid (C22:1)	-	Under 0.10
Total saturated fatty acids		9.00
Total monounsaturated fatty acids	8.20	13.60
Total polyunsaturated fatty acids	Over 80.00	-
Total unidentified acids	0.10	0.70
Total fatty acids	99.30	99.90
Trans fatty acids	-	2

3 Form of preparation and consumption:

8. Consumption of sachu inchi oil can be included in the same food categories and at the same use levels at which flaxseed oil is currently marketed. This includes its use as a dressing, for example, on salads, and its incorporation into a range of foods and food supplements, as well as in lightly fried food (smoke point: 255°C). (See Figure 2).

Ingredient in bars (such as granola, energy, protein and nutrition bars)	level up to: 7%		Fats and oils (mayonnaise, salad dressings, margarine-like spreads)	level up to: 17%	
breakfast cereals	6%		Salad oil	100%	
Condiments and relishes (such as tapenades and hummus)	7%		Gravies (including meat)	7%	
chocolates	6%		Seed and nut butters	7%	
			Snack foods	7%	

Source: GRAS Notice N° GRN 000506

Figure 2 – Sacha inchi oil use levels

9. FSAI, for example, has reported that sachu inchi oil is substantially equivalent to flaxseed oil in terms of composition, nutritional value, metabolism, intended use and the level of undesirable substances. Flaxseed oil has a history of safe use in the EU and sachu inchi oil would be subject to the same conditions of general and specific legislation governing the marketing and use of vegetable oils in the EU.

10. Sacha inchi oil trade volume:

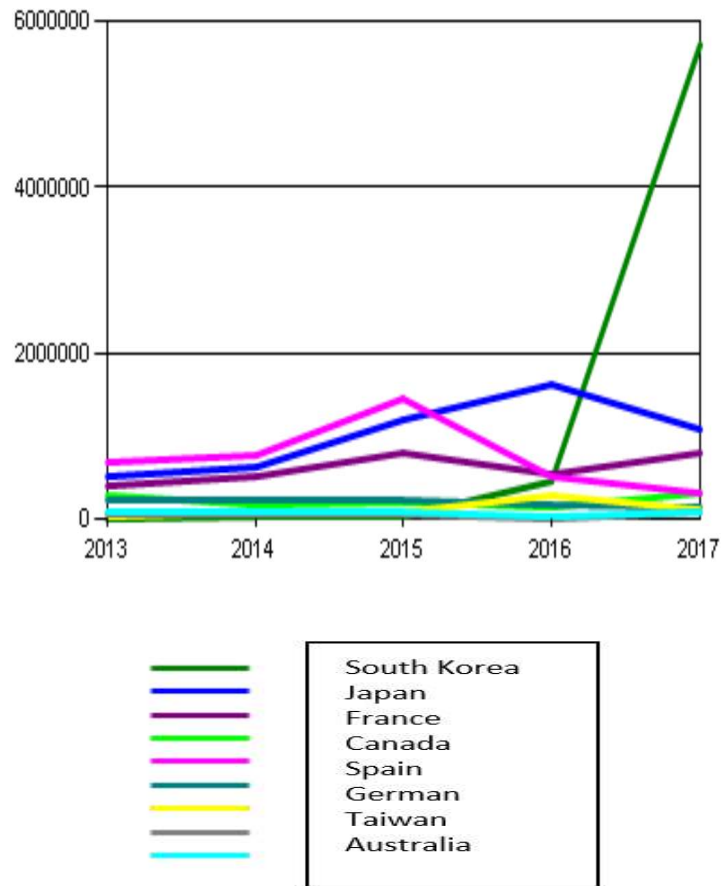
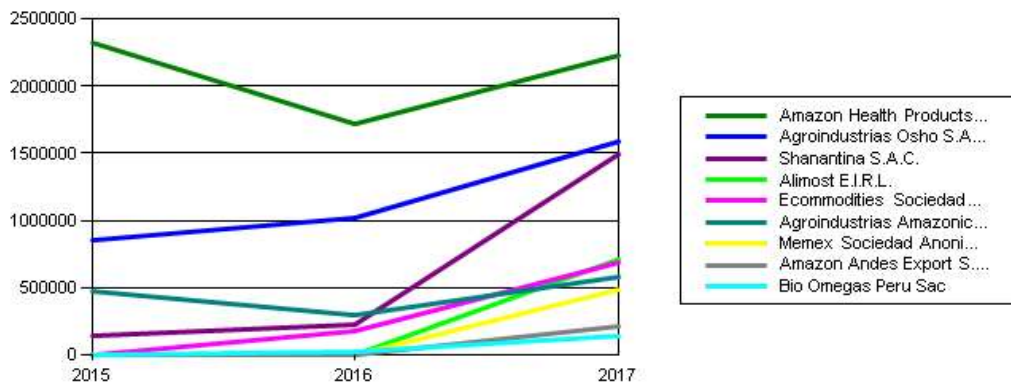


Figure 3 - Sacha inchi oil exports in kg by main destination countries between 2013-2017 (FOB (USD))
 Source: SUNAT (Peru's customs and tax authority), compiled by PROMPERU (national commission for the promotion of exports and tourism)



* Only presentations forms that were exported in 2017

SOURCE: SUNAT, compiled by PROMPERU

Figure 4 - Evolution of Sacha inchi product exports by main exporting companies between 2015 and 2017 (FOB (USD))

**EVOLUTION OF SACHA INCHI PRODUCT EXPORTS BY MAIN EXPORTING COMPANIES BETWEEN
2015 AND 2017 (FOB (USD))**

Main Exporting Companies	2015	2016	2017
Amazon Health Products Sociedad Anónima Cerrada	2,318,856.78	1,713,630.41	2,225,741.41
Agroindustrias Osho S.A.C.	859,543.52	1,017,432.00	1,588,396.36
Shanantina S.A.C.	141,642.00	230,911.63	1,494,629.96
Alimost E.I.R.L.	0.00	0.00	711,122.29
Ecommodities Sociedad Anónima Cerrada _	0.00	180,985.78	684,751.51
Agroindustrias Amazónicas S.A.	474,023.44	300,853.81	583,192.98
Ecommodities Sociedad Anónima Cerrada	0.00	1,200.00	481,282.58
Amazon Andes Export S.A.C.	0.00	537.50	214,840.00
Bio Omegas Perú SAC	360.00	27,814.00	142,976.00
Nutry Body Sociedad Anónima Cerrada	11,548.68	12,162.00	114,919.50
Agromer Peru Foods S.A.C.	0.00	0.00	114,650.00
Kumara Food International Sociedad Anónima Cerrada - Kumara Food International Sac	0.00	0.00	73,195.06
Agromer Procesos Del Peru E.I.R.L.	0.00	0.00	61,935.00
Algarrobos Orgánicos del Perú Sociedad Anónima Cerrada	45,040.00	48,920.00	61,281.42
Ecoandino S.A.C.	0.20	0.00	60,895.56
Organic Harvest S.A.C.	0.00	0.00	42,637.50
Olivos Del Sur S.A.C.	32,372.10	21,728.82	38,763.93
3qp Sociedad Anónima Cerrada	0.00	24,154.40	35,245.10
Laboratorio Herbal Food Sociedad Anónima	0.00	4,398.75	32,823.56
Amazonas Trading Peru S.A.C.	0.00	0.00	24,000.00
Naike E.I.R.L.	0.00	0.00	19,152.00
Alinap S.A.C.	137,411.39	202,884.57	17,900.00
Veli Corp Peru S.A.C.	0.00	15,267.20	17,336.60
Natural Health Foods S.A.C.	0.00	9,130.00	15,460.00
Glint S.A.C.	0.00	0.00	14,247.00
Com Alt De Prod No Trad Y Des En Lat Ame	15,990.70	5,721.24	12,530.27
Agro Americano S.A.C.	0.00	0.00	11,160.00
Alpha Naturals E.I.R.L.	0.00	4,130.00	10,243.42

Main Exporting Companies	2015	2016	2017
Mcmc Peru S.A.C.	0.00	0.00	9,077.04
Peruvian Nature S & S S.A.C.	81,333.81	10,192.00	8,580.12
Octoking Export S.A.C.	0.00	0.00	8,531.00
Exportaciones Amazónicas Nativas Srltda.	71,461.75	65,479.50	7,963.47
Ans Peruana Empresa Individual De Responsabilidad Limitada	2,953.60	12,097.00	7,524.00
Servicio Exportación de Mineral Sociedad Anónima Cerrada	0.00	0.00	6,000.00
Cpx Perú S.A.C.	0.00	6,240.00	5,359.44
Superfoods Peru S.A.C.	16,061.66	0.00	4,717.08
Empresa Agroindustrial del Perú S.A.	13,624.00	0.00	4,160.00

11. Below are the exports of sacha inchi (in all presentation forms) to its different destination markets during 2018, and from January to June 2019 (see Figures 5 and 6). In 2018, the Republic of Korea continued to rank first among export destinations.

Exportaciones Sacha Inchi en 2018. Valores FOB en Miles US\$

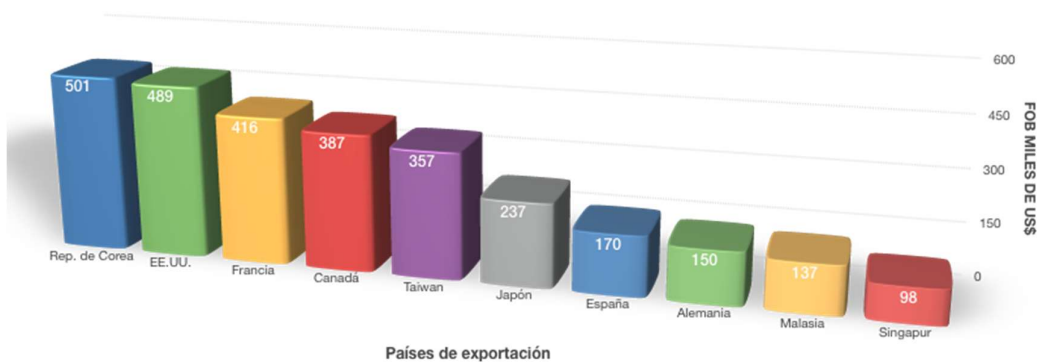


Figure 5. Exports of sacha inchi in all presentation forms to its main destination markets during 2018 (Source: Own elaboration based on data from MINCETUR - Ministry of Foreign Trade and Tourism)

Exportaciones Sacha Inchi desde enero hasta junio 2019. Valores FOB en Miles US\$

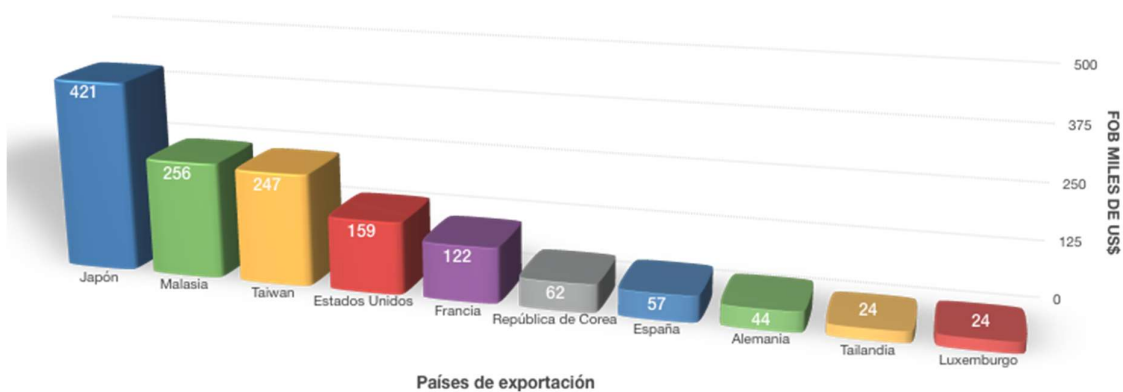


Figure 6: Exports of sacha inchi in all presentation forms to its main destination markets from January to June 2019 (Source: Own elaboration based on data from MINCETUR)

12. The most exported product is sacha inchi oil, with its main destination markets being France in 2018 and Japan in 2019 (see Figures 7 and 8).

Exportaciones de aceite de Sacha Inchi en 2018. Valores FOB en Miles US\$

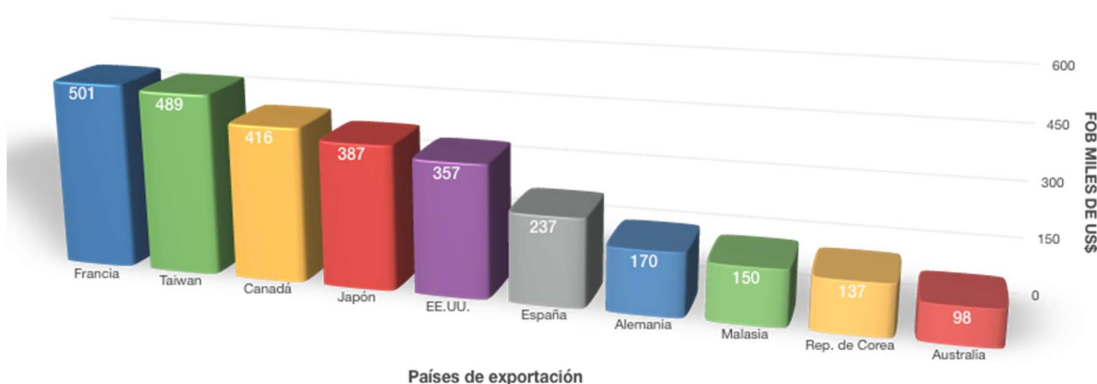


Figure 7: Sacha inchi oil exports during 2018 (Source: Own elaboration based on data from MINCETUR)

Exportaciones de aceite de Sacha Inchi desde enero hasta junio 2019. Valores FOB en Miles US\$

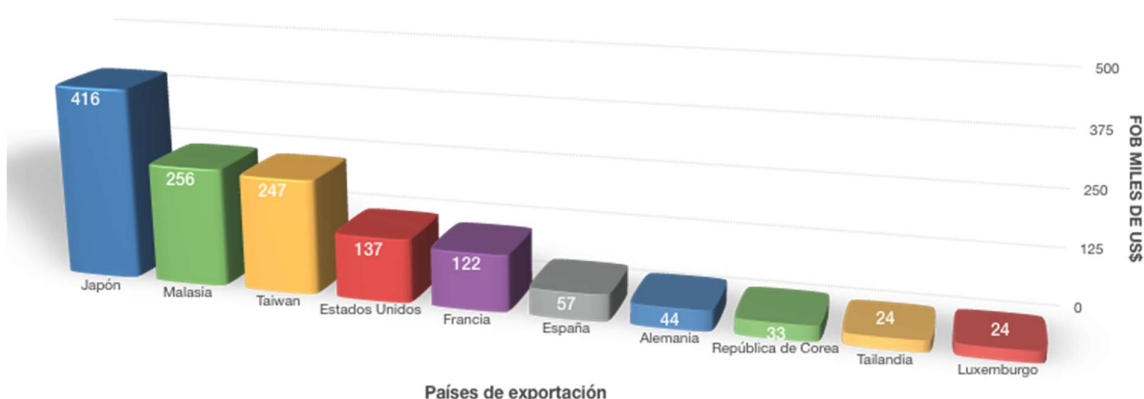


Figure 8: Sacha inchi oil exports from January to June 2019 (Source: Own elaboration based on data from MINCETUR)

5 Origin and geographical distribution

- 13 The Euphorbiaceae family comprises annual plants, used for ornamental, medicinal, food and industrial purposes. Their main characteristic is the presence of a milky, latex-type substance and three-capsule fruits. This family includes about 1280 genera with about 8000 species and is found all over the world (Bailey, 1949).
- 14 The *Plukenetia* genus has been reported in Malaysia, New Guinea, Borneo, Mexico, etc. (Biblioteca Conmemorativa Orton, 1987). The number of species reported in tropical America varies from 7 to 12 (Stanley & Steyemark, 1949; Hutchinson, 1969). In South America, *Plukenetia volubilis* L., has been observed in Peruvian Amazonia, Bolivia and the West Indies (Macbride, 1951).
- 15 In Peru, it has been found in the districts of Madre de Dios, Huánuco, Oxapampa, San Martín, Rodríguez de Mendoza, the Ucayali river basin (Pucallpa, Contamana and Requena), in Putumayo and around Iquitos and Caballococha. Soukup (1970) reports that raw or cooked leaves were eaten by the original inhabitants of Amazonia, particularly the huitoto people.
- 16 In the San Martín region, it is found along the Huallaga river basin up to the district of Yurimaguas, the upper and lower Mayo river, the Cumbaza river sub-basin, and in areas of the Lamas-Shanusi sector.
- 17 Finally, the new work proposal is consistent with the Criteria for the Establishment of Work Priorities applicable to commodities, as specified in the Codex Alimentarius Commission Procedural Manual, 27th edition (2019).

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Appendix I**PART III - AMENDMENT/REVISION TO THE CODEX STANDARD FOR NAMED VEGETABLE OILS
(CXS 210-1999) - INCLUSION OF SACHA INCHI OIL****PROJECT DOCUMENT****1. PURPOSE AND SCOPE**

The purpose of the work proposal is:

- To develop a framework for amending the *Standard for named vegetable oils* (CODEX STAN 210-1999) by adding the definition of sacha inchi oil to Section 2 and including its fatty acid profile in the standard, in order to establish quality, purity and food safety criteria for this edible oil and facilitate trade in this product.

- Sacha inchi (*Plukenetia Volubilis* L.) is also known as *maní del monte* ("forest peanut"), *maní estrella* ("star-shaped peanut") (Colombia), *maní del inka* ("Inca peanut") and "supua" (Bolivia).

Consumption of this oil can be included in the same food categories and at the same use levels at which flaxseed oil is currently marketed. This includes its use as a dressing, for example, on salads, and its incorporation into a range of foods and food supplements, as well as in lightly fried food (smoke point: 255°C).

The scope of this Draft Technical Standard is international.

2. RELEVANCE AND TIMELINESS

The work proposed falls within the remit of the Codex Committee on Fats and Oils (CCFO), i.e., "to elaborate world wide standards for fats and oils of animal, vegetable and marine origin including margarine and olive oil".

The new work will include the quality and composition characteristics of sacha inchi oil to enable the quality control of the product, facilitate international trade, improve consumer protection and prevent adulteration as well as deceptive and fraudulent practices. To reach these goals, the quality and authenticity of sacha inchi oil will be verified on the basis of the latest scientific developments.

Sacha inchi is a native plant of Peruvian Amazonia which was first described as a species by naturalist Linnaeus in 1753. References to its existence have been made over time in historical documents, such as the "Royal Commentaries of the Incas" (by Inca Garcilaso de la Vega), which mentions that indigenous people used the word "inchi" to name the fruit that Spaniards called "peanut" (*maní*), as well as the way it was consumed and used.

3. MAIN ASPECTS TO BE COVERED

The main aspect to be covered is the inclusion of the product in Section 2.1 Product definition, as well as in Table 1: Fatty acid composition of vegetable oils as determined by gas liquid chromatography from authentic samples (expressed as percentage of total fatty acids) of CODEX STAN 210. The new work proposed will follow the CODEX structure and will include the quality requirements for sacha inchi oil:

- a. Sacha inchi edible oil is not included in CODEX STAN 210-1999.
- b. The definition of cold pressed oils.
- c. Quality and composition characteristics.
- d. Contaminants and food safety related issues.
- e. Organoleptic characteristics.
- f. Purity criteria.
- g. Food additives.
- h. Labelling.
- i. Methods of analysis

4. ASSESSMENT AGAINST THE CRITERIA FOR THE ESTABLISHMENT OF WORK PRIORITIES

This new work meets the following criteria applicable to the product:

General criteria

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.

a) Consumption of sacha inchi oil has increased due to its beneficial components and it might be considered as a functional food for consumer protection, so the amendment to Codex Stan 210-1999 might be considered in order to provide related information to ensure safety issues for the production and trade of this edible oil.

b) Promoting consumer protection and the prevention of fraudulent practices by determining authenticity specifications.

c) Providing greater assurance of the quality of the product to meet consumer needs and the minimum requirements for food safety.

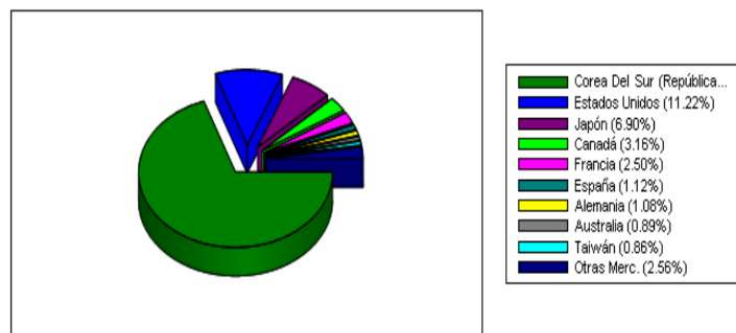
d) Establishing levels of standardization based on the properties of the product to meet industrial and consumer needs with exactness and credibility.

Criteria applicable to general subjects

4.1 Volume of production and consumption in individual countries and pattern of trade between countries:

Sacha inchi oil exports in kg by main destination countries in 2017

EXPORTACIONES DEL PRODUCTO SACHA INCHI SEGUN SUS PRINCIPALES MERCADOS EN EL 2017



Source: SUNAT, compiled by PROMPERU

FIGURE 1 – Sacha inchi exports, main destination markets - 2017

Below are the exports of sacha Inchi (in all presentation forms) to its different destination markets during 2018, and from January to June 2019 (see Figures 2 and 3). In 2018, the Republic of Korea continued to rank first among export destinations.

Exportaciones Sacha Inchi en 2018. Valores FOB en Miles US\$

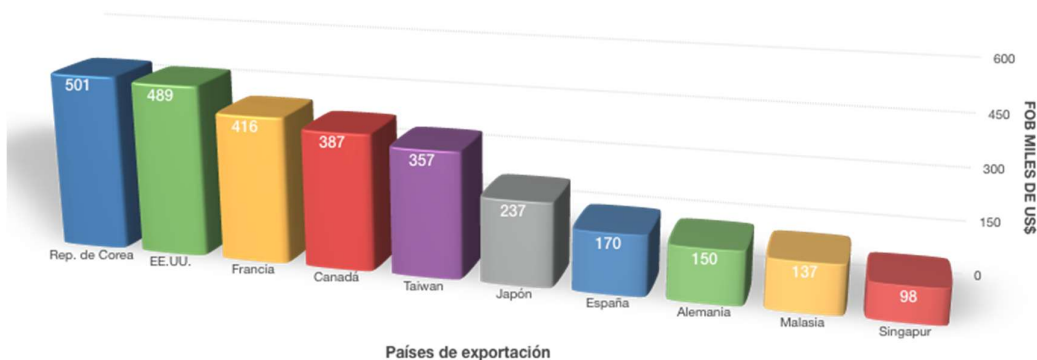


Figure 2. Exports of sacha inchi in all presentation forms to its main destination markets during 2018 (Source: Own elaboration based on data from MINCETUR).

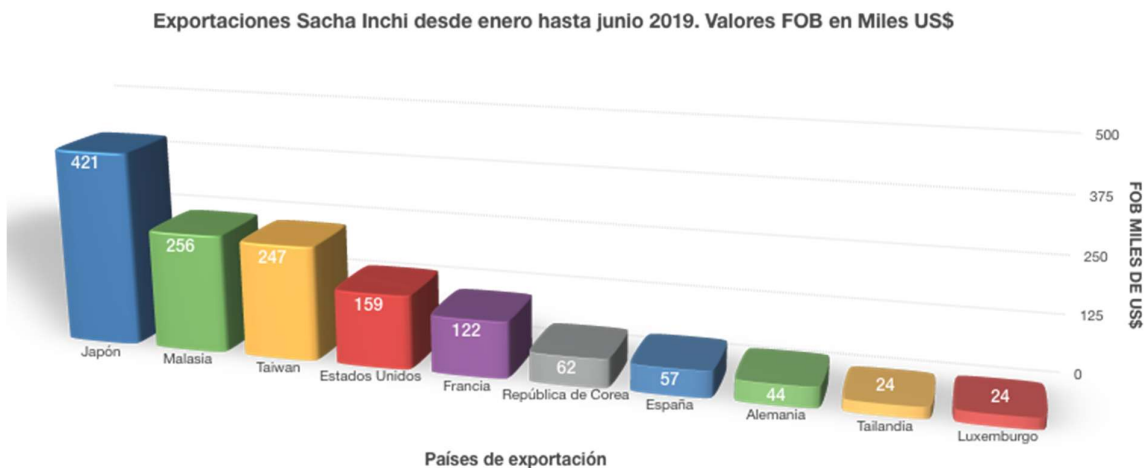


Figure 3: Exports of sachu inchi in all presentation forms to its main destination markets from January to June 2019 (Source: Own elaboration based on data from MINCETUR).

Sachu inchi in other countries:

In Ecuador, the Ministry for Agriculture, Livestock, Aquaculture and Fisheries (MAGAP) promoted a project to grow sachu inchi, through the Second Kennedy Round or 2KR programme (assistance to low-income farmers) within the Ecuador-Japan cooperation framework (MAGAP, 2014).

Currently, 3.5 tons per hectare are obtained per year, which means that the total production of sachu inchi in the country amounts to 2 845.5 tons. In percentage terms, it is estimated that the province of Manabí consolidates 30.75 % of production, with 813 ha (Burbano, 2015). The largest production area is Manabí, with 250 ha. In the northwest of the Pichincha area, land cultivated with this crop extends over 150 ha.

In Bolivia, the National Alternative Development Fund (FONADAL, by its Spanish acronym) used resources from the European Union (250,000 bolivars) to finance the production of sachu inchi in 50 hectares of the Palos Blancos municipality. This benefits over 50 families in the region. The director for projects stated that, since this is an extremely valuable food product, the government will prioritize its production for the nursing allowance due to its nutritional and medicinal properties. The surplus will be exported to Korea and England [La Razón newspaper, November 10th, 2013]. [La Sociedad de BOLIVIA newspaper, December 12th, 2014]

In Colombia, since 2012, Green M & A Solutions has been working to replace illegal crops, so that farmers who plant coca may grow sachu inchi instead, a dry fruit that is considered to be a superfood. In 2015, Green was acquired by the American company QED Connect Inc. and created Inca Snacks, a business that already exports sachu inchi and Colombian nuts (seeds) to the United States, where they are roasted and packed for retail. Companies help farmers grow the Inca seeds (sachu inchi) in projects located in Choco, Antioquia and Nariño, very important states of Colombia. The agreement is a key element to secure financing and a guarantee from USAID. Their plan is to use 35,000 hectares for production in the country. To reach this goal, they work with USAID, which is the United States cooperation agency, and the Colombian government. The sachu inchi harvested area has expanded in Colombia since 2007 (see Figure 4).

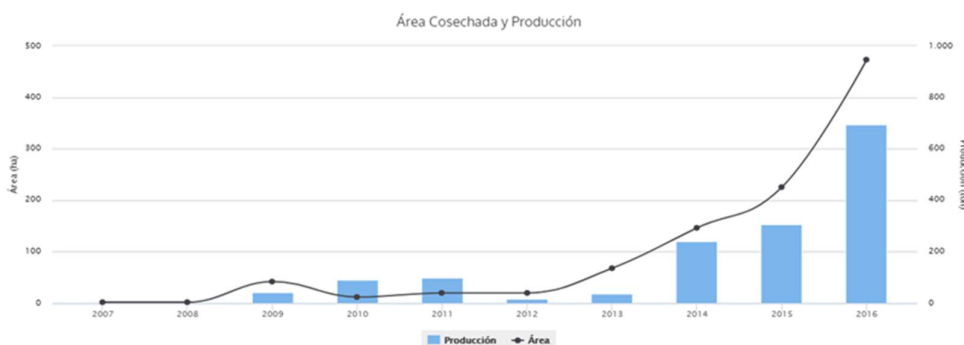


Figure 4: Colombia: Sachu inchi, harvested area and production between 2008 and 2016 [Source: Agronet - Colombian Government]

4.2 Diversification of national legislation and apparent resultant or potential impediments to international trade

Member countries could use the Codex standard as a reference to establish their national regulations.

At present, producing and consuming countries often apply national regulations which are different in important aspects related to the quality and authenticity parameters and the methods of analysis.

4.3 International or regional market potential

Sacha inchi production is expected to increase considerably, with a number of other countries becoming producers, such as some in Asia.

4.4 Amenability of the commodity to standardisation

There are two national standards (from Ecuador and Peru). This means that sacha inchi oil has been standardized for over 10 years, and this is demonstrated by the amenability of sacha inchi to international standardization.

5. RELEVANCE TO THE CODEX STRATEGIC OBJECTIVES

The new work proposed would help ensure fair and equitable practices in international trade of sacha inchi oil by considering the special needs and concerns of all countries, since it will meet the following strategic goals and priorities of the 2020-2025 Codex Alimentarius Commission Strategic Plan.

Goal 1: Address current, emerging and critical issues in a timely manner

1.1 Identify needs and emerging issues.

This amendment to the Codex standard to make it more globally representative will help ensure its wide adoption by member countries and minimize the potential negative effects of technical regulations in international trade, preventing these from becoming unnecessary technical barriers to trade.

1.2 Prioritize needs and emerging issues.

In this way, Codex will address this emerging issue in a timely manner, in addition to meeting the needs of members such as Peru, Ecuador and Colombia, which are interested in the international standardization of sacha inchi oil.

Goal 2: Develop standards based on science and Codex risk-analysis principles

2.1 Use scientific advice consistently in line with Codex risk-analysis principles.

The study of sacha inchi oil is firmly based on scientific data, which has already been reviewed in the dossier submitted in connection with the Novel Food reports and the GRASS report.

2.2 Promote the submission and use of globally representative data in developing and reviewing Codex standards.

The development of a standard for sacha inchi oil, a biodiversity-related product, results in the protection of human health and the environment, because it considers aspects that, if not complied with, have negative effects on consumers. In addition, inadequate growing or exploitation affects the environment. However, the technical standard does not include these practices specifically. The standard can have a positive effect on trade, making it more equitable among countries, since it includes requirements for sacha inchi oil which constitute a point of reference for making agreements, regardless of the countries involved in its trade.

It is important to point out that sacha inchi must be grown using sustainable, environmentally friendly agriculture that ensures contaminant-free production. Good practices aimed at crop conservation help to maintain biodiversity. The essential ecologic characteristics of those ecosystems where sacha inchi occurs naturally must be kept and preserved, without performing any activities that pose a threat to their conservation. In this way, the genetic base will be kept, and then improvements will be made to obtain high-productivity varieties (good yields and oil content) able to resist pest and disease.

6. INFORMATION ON THE RELATION BETWEEN THE PROPOSAL AND OTHER EXISTING CODEX DOCUMENTS AS WELL AS OTHER ONGOING WORK

The Standard for named vegetable oils (CODEX STAN 210-1999) is connected with this subject, so an amendment to this standard is proposed in order to include sacha inchi oil in it.

7. IDENTIFICATION OF ANY REQUIREMENT FOR AND AVAILABILITY OF EXPERT SCIENTIFIC ADVICE

The technical-scientific knowledge that supports the information considered in this proposed standard is in place. There are experts who are responsible for the studies and we are committed to making them available, if required, when the standard is developed.

Likewise, there is the Grupo de Investigación de Biocomercio (Biotrade Research Group) or GIB by its Spanish acronym (see list of members below), which has set a research agenda in Peru for safety and quality studies in

connection with *sacha inchi*. Since 2008, funds have been provided to researchers on a competitive basis, so that they can fill in the information gaps about *sacha inchi*'s safety and quality.

In addition, the databases used can be accessed through Peru's National Science, Technology and Technological Innovation Council (CONCYTEC).

Table 1: Members of the Biotrade Research Group - GIB

Members of the Grupo de Investigación de Biocomercio - GIB (2019)		
Name	Institution	Specialization
Dr. Arilmi Gorriti	San Marcos National University (UNMSM) - Faculty of Pharmacy and Biochemistry	Pharmacognosy
Dr. Patricia Glorio	La Molina National Agricultural University (UNALM) - Faculty of Food Engineering	Food safety
Dr. Elsa Rengifo	Peruvian Amazonia Research Institute (IIAP)	Ethnobotany
Dr. Asunción Cano	San Marcos National University (UNMSM)	Botany and taxonomy
Dr. Gustavo Gonzales	Cayetano Heredia University (UPCH)	Science and medicine
Dr. Mari Medina	San Martín National University (UNSM)	Food technology
Dr. Olga Lock de Ugaz	Chemical Society of Peru	Chemistry

8. IDENTIFICATION OF ANY NEED FOR TECHNICAL INPUT TO THE TECHNICAL STANDARD FROM EXTERNAL BODIES SO THAT THIS CAN BE PLANNED FOR

Relevant organizations, such as AOCS, are expected to participate in the review of the Codex standard.

Standards from other countries are available, such as:

- NTE INEN 2688:2014 ACEITE DE SACHA INCHI (*sacha inchi* oil). Ecuador's REQUIREMENTS
- NTP 151.400:2018 SACHA INCHI. Oil. Requirements. 3rd edition - Peru

9. PROPOSED TIMELINE FOR COMPLETION OF THE NEW WORK

Stage	Expected date
Introduction of new work in CCFO	During CCFO27 in 2021
Approval of new work	During CAC44 in 2021
Consideration of the proposed draft amendments at Step 4	During CCFO28 in 2023
Submission to CAC for adoption at Step 5	2023
Step 7	CCFO29 in 2025
Submission to CAC for adoption at Step 8	CAC25

ANNEX

PROPOSED DRAFT REVISION TO THE STANDARD FOR NAMED VEGETABLE OILS (CODEX STAN 210-1999): INCLUSION OF SACHA INCHI OIL

2. DESCRIPTION**Section 2.1 Product Definition**

Sacha inchi oil is derived from the fruit of sacha inchi (*Plukenetia volubilis* L.) seeds.

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

Sacha inchi oil	
Fatty acids	Proposal
C6:0	-
C8:0	-
C10:0	-
C12:0	-
C14:0	-
C16:0	3.70 - 4.40
C18:0	2.57 - 3.20
C18:1 n-9	8.50 - 10.50
C18:1 t-11	ND - 0.56
C18:2 n-6	32.0– 38.0
C18:3 n-3	42.00– 48.00
C20:0	ND - 0.10
C20:1	ND - 0.30
C20:2	-
C22:0	-
C22:1	ND - 0.10
C22:2	-
C24:0	-
C24:1	-

Table 2: Chemical and physical characteristics of sachachi oil

Parameter	Sachachi oil	Recommended methods of analysis*
Relative density (x°C/water at 20°C) Density at 20 °C (determination of volumetric mass at 20 °C) (g/cm ³)	0.92 - 0.93	ISO 6883, with the appropriate conversion factor; or AOCS Cc 10c-95 Principle: Pycnometry
Refractive index at 20 °C	1.4780 - 1.4820	ISO 6320 or AOCS Cc 7-25 Principle: Refractometry
Saponification value (mg KOH/g)	189.00 - 196.00	ISO 3657 or AOCS Cd 3-25 Principle: Titrimetry
Iodine value (Hanus solution) (g/100g)	182.00 - 199.00	ISO 3961 – Wijs; or AOAC 993.20; or AOCS Cd 1d-92; or NMKL 39 Principle: Wijs-Titrimetry
Unsaponifiable matter (%)	max. 0.5	ISO 3596; or ISO 18609; or AOCS Ca 6b-53 Principle: Gravimetry

* CXS 234 – 1999 Recommended Methods of Analysis and Sampling

Table 3: Content of other sachachi oil nutrients

Requirement	Not lower than (mg/kg)	Not higher than (mg/kg)
Alpha-tocopherol	6.0	7.0
Beta-tocopherol	1.8	2.9
Gamma - tocopherol	1 108.0	1 367.0