CODEX ALIMENTARIUS COMMISSION

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World Health Organization

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CODEX COMMITTEE ON FATS AND OILS
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DISCUSSION PAPER ON ADDITION OF PALM OIL WITH HIGH OLEIC ACID (OxG)

(Prepared by electronic working group led by Colombia)

INTRODUCTION

1. At CCFO22 (Penang, Malaysia 21-25 February 2011), Colombia presented a proposal to develop provisions for high oleic palm oil produced by the hybrid OxG (*Elaeis oleifera* x *Elaeis guinensis*) in the *Standard for Named Vegetable Oils* (CX/FO 11/22/14). In view that the document was received late and members of the Committee did not have sufficient time to have national consultation, the Committee agreed to consider the proposal at its next session. The Committe also agreed to establish an electronic working group (EWG), chaired by Colombia to prepare a revised discussion paper including a project document, taking into account views and comments made at the current session and based on the *Guidelines on the Application of the Criteria for the Establishment of Work Priorities Applicable to Commodities* and information required by the Committee when proposing the addition of new oils to the Standard for Named Vegetable Oils for consideration at the next session.[1]

2. CCFO23 (Langkawi, Malaysia 25 February – 1 March 2013), noted that the revised document (CX/FO 13/23/8) lacked information on volume of production and consumption in individual countries and volume and pattern of trade between countries. In this regard, the Committee agreed to establish EWG chaired by Colombia to revise the discussion paper including a project document, taking into account comments made at CCFO23 and based on the *Guideline for Application of the Criteria for the Establishment of Work Priorities Applicable to Commodities* and information as required by the CCFO when proposing the addition of new oils to the *Standard for Named Vegetable Oils* agreed by the CCFO23, for consideration at the next session of the CCFO.[2]

3. The following Members participated in the EWG: Belgium, Brazil, Costa Rica, European Union, Luxembourg, Nigeria, Netherlands, Poland, Belarus, Russian Federation, Spain, Switzerland, Thailand, United Kingdom and the United States of America.

SUMMARY OF DISCUSSION

4. Brazil, European Union, Nigeria and Spain provided comments to the EWG. Major observations and comments provided were as follows:

- The majority of the observations given by the members in the EWG were focused on suggesting spelling aspects, indicate source and re-arrange some words in various paragraphs of the document, for clarity purposes.
- Suggestion were made on different aspects of the document, including discussion of the nutritional benefits of this specific oil to human health; inclusion of range of values instead of a single number for the parameters of this type of oil; suggestion to align the project document with the provisions of the Codex Procedural Manual; description of the main differences between this oil and palm oil which would justify a new standard; the inclusion of fatty acid composition of palm oil with high oleic acid OxG in the Codex STAN 210-1999; provide data to demonstrate that trade in this commodity represents a significant proportion of the domestic economy of the relevant countries; provide

[1] REP11/FO paras 87-91
[2] REP13/Fo paras 111 - 118

information that might give evidence of actual impediments to international trade and assessment on market potential in the foreseeable future.

- The European Union noted that the information provided was not sufficient to demonstrate that trade of this commodity represents a significant proportion of the domestic economies of the producing countries (Colombia and Ecuador).
- Neither information nor notification was received regarding to the cultivated area, production, and trade of this commodity through the EWG.

5. Comments received after the deadline could not be considered.

CONCLUSION

6. The Project Document revised by the EWG is attached as Appendix for consideration by CCFO24.

APPENDIX

**PROJECT DOCUMENT FOR AMENDING
THE *STANDARD FOR NAMED VEGETABLE OILS* (CODEX STAN 210-1999)
TO ADD PALM OIL WITH HIGH OLEIC ACID (OxG)**

1. Purpose and scope of the standard

The objective of this project is to request the inclusion of high oleic palm oil (OxG) (*Elaeis oleifera x Elaeis guineensis*), for marketing in edible form oriented industries involved in refining processes, bleaching and deodorization and consumers.

The inclusion of food safety and quality requirements of this oil in the *Standard for Named Vegetable Oils* (CODEX STAN 210-1999) will enable the establishment of standards and the monitoring of food safety procedures in this product, facilitate the conditions for its commercialization and serve as a frame of reference for the establishment of technical standards on edible fats and oils of this type.

2. Relevance and timeliness

During the last 20 years, global consumption of vegetable oils has increased significantly in regards to production, marketing and industrial use. However, this growth has involved an adaptation process to new consumer trends, a consumer-oriented health food, and increased competition among industries for this type of product positioning.

Following these changes both consumers and the food industry, prefer the use of oils high in oleic acid, through the recognized nutritional benefits of consuming more oleic acid and oxidation stability as a mechanism to improve chemical, nutritional and physical product quality characteristics. This results in greater demand for more nutritional foods and increased competition among industries to sell their products.

Based on the above, and considering that world consumption trends show a preference for natural and nutritional foods, the oil obtained from hybrid materials OxG represents a healthy alternative to cover daily requirements of fats and fat-soluble vitamins. Similarly, the high concentration of minor components in these oils represents a commercial alternative to obtain carotene, vitamin E (*tocopherols and tocotrienols*) and sterols of high bioavailability with numerous applications in the food products industry.

These comparative advantages of oils extracted from the different oil palm varieties should facilitate their acceptance in the food products industry and make their way to reach consumers. For this reason, it is necessary to establish both general and specific requirements to characterize palm oil high in oleic acid (OxG).

(1) Information on the species

Palm oil is extracted from the mesocarp of the palm fruit; there are two species of the *Elaeis* genus of importance in the global oil palm industry: *Elaeis guineensis*, which originated in central and western Africa, and *Elaeis oleifera*, which is originally from South and Central America.

Since the 1970s, several countries have developed hybrids between the American oil palm, *Elaeis oleifera*, and the African oil palm, *Elaeis guineensis*. The result of the crossing is an interspecific hybrid called OxG. In Colombia, Ecuador, Brazil, Costa Rica, France and Malaysia, there are gene banks of this material. Highlights of EMBRAPA (Brazil), ASD (Costa Rica), CIRAD (France) and MPOB (Malaysia). In Colombia and Ecuador for more than 10 years ago there are commercial plantations of hybrid palm OxG.

The characteristics of this new material include:

- High resistance to diseases and pests that commonly affect E. guineensis of African origin, such as the bud rot disease (BRD) in Colombia and yellowing disease in Brazil.
- The oil extracted from the fruit features a high content of unsaturated fatty acids: oleic values above 50%, linoleic values above 12%, and iodine content above 60%, which increases the fluidity of the oil and facilitates its use in the food processing industry and home cooking.
- The oil has high carotene content, greater than 1050 ppm, as well as over 1175 ppm of tocopherols and tocotrienols.

Even though several countries have other interspecific hybrid materials, in 2009 Ecuador and Colombia agreed to denote the oil extracted from the fruits of the interespecific hybrid OxG as “palm oil high in oleic acid”.

Currently, this hybrid material OxG is an excellent alternative compared to *Elaeis guineensis* for oil palm growers affected by BRD, given that it has mitigated the impact of BRD in oil palm plantations in Colombia

and Ecuador. It is now sown as hybrid OxG in Central America. Brazil reports the planting of 12,000 hectares that are in their early growth stage.

(2) Characterization of *Elaeis oleifera* interspecific hybrid by *Elaeis oleifera x Elaeis guineensis* (OxG)

Metabolites and fatty acid composition in oil

The oil extracted from the interspecific hybrid OxG, is characterized by a significantly higher content of carotenoids, tocopherols, tocotrienols, and oleic acid than the traditional palm oil. **Table 1** to **Table 4**.

Table 1. Characteristics of oil palm (*Elaies guineensis*) and palm oil high in oleic acid

Characteristics	Palm oil (*Elaeis guineensis*)[1]	Palm oil high in oleic acid
Relative density (x°C/water at 20°C)	*(i)* *0.891 – 0.899* x=50°C	*(ii)* *0.895 – 0.910*[2,3] X=50°C
Refractive index (ND 40°C)	*(iii)* *1.454 – 1.456* at 50°C	*(iv)* *1.459 – 1.461*[2,3]
Saponification value (mg KOH/g oil)	190 – 209	189 – 199 [2,3]
Iodine value	50.0 – 55.0	65 – 72[4]
Unsaponifiable matter (g/Kg)	<12	<12[2,3]
Total carotenoids	500 -700[5]	850 - 1050[4]

Source:
[1] Codex Standard for named vegetables oils 210 -1999.
[2]Norma Técnica Colombiana NTC 5713:2009, Aceite de palma OxG (*Elaeis guineensis x Elaeis oleífera*) alto oleico. Requisitos.
[3] Norma Técnica Andina 0073:2009, Aceite de palma (OxG) alto oleico. Requisitos.
[4] Data of the high oleic palm oil producers
[5] Nagendran, B; Unnithan U.R.; Choo, Y.M and Sundram, K. (2000) Characteristics of red palm oil, a carotene – and Vitamin E- rich refined oil for food uses. Food & Nutrition Bulletin, Volume 21, Number 2, June 2000, pp. 189-194(6)

Table 2. Fatty acid profile of the oil palm (Elaeis guineensis) and high oleic palm oil

Fatty acid (%)		*Palm oil (Elaeis guineensis)*[1]	*Palm oil high in oleic acid*[2,3]
Lauric acid	C12:0	< 0,5	0,11 – 0,38
Miristic acid	C14:0	0,5 – 2,0	0,4 – 0,7
Palmitic acid	C16:0	39,3 – 47,5	25 – 34
Estearic acid	C18:0	3,5 – 6,0	2,0 – 3,8
Oleic acid	C18:1	36 – 44	48 – 58
Linoleic acid	C18:2	9 -12	10 – 14
Linolenic acid	C18:3	< 0,5	< 0,6
Araquidic acid	C20:0	< 0,1	<0,4

Source:
[1] Codex Standard for named vegetables oils 210 -1999.
[2] Norma Técnica Colombiana NTC 5713:2009, Aceite de palma OxG (*Elaeis guineensis x Elaeis oleífera*) alto oleico. Requisitos.
[3] Norma Técnica Andina 0073:2009, Aceite de palma (OxG) alto oleico. Requisitos

The fatty acid profile shows significant differences between genetic material *Elaeis guineensis* and the interspecific hybrids OxG, mainly in the percentages of saturated fats, monounsaturated and polyunsaturated fats. The high oleic palm oil has some features that make it a healthy food to be considered:

- Oleic acid is an essential fatty acid, has a neutral-reducing effect on the lipid profile, increase high density lipoprotein (HDL) and reduces low density lipoprotein (LDL). Is involved in the regulation of fat metabolism and body weight balance. When located in the sn-2 triglyceride position, it is more easily

absorbed by the body. The distribution analysis of fatty acids in triglycerides in high oleic palm oil shows that 65.5% of the oleic acid is located in the sn-2 position[3].

- It is a good source of linoleic acid, an essential fatty acid used in the synthesis of prostaglandins involved in inflammatory response, in the temperature regulation and the hormonal response.
- Carotenoids, Vitamin E and sterols are bioactive food components are substances that generate beneficial physiological effects on health: reduction of plasma cholesterol and prevent arteriosclerosis, cancer and degenerative diseases, reduce the risk of cardiovascular diseases and strengthens defenses and slows the aging process of the body.

According to the above, and considering the current trends towards the consumption of natural and nutritious food, high oleic palm oil is a healthy alternative to meet the daily requirement of fat, essential fatty acids and fat soluble vitamins.

Table 3. Levels of desmethylsterols of the oil palm (Elaeis guineensis) and high oleic palm oil

Desmethylsterol	Palm oil (*Elaeis guineensis*)[1]	Palm oil high in oleic acid[2]
Cholesterol	2,6 – 7,0	2,5-3,6
Brassicasterol	ND	*(v) ND-0,2*
Campesterol	12,5-39,0	16,6-18,6
Stigmasterol	7,0-18,9	13,4-15,5
Beta-sitosterol	45,0-71,0	57,2-60,9
Delta-5-aventasterol	ND-3,0	1,4-1,9
Delta-7-stigmasterol	ND-.,0	0,1-0,2
Delta-7-avenasterol	ND-6,0	ND-0,1
Others	ND-10,4	1,8-6,0
Total sterols (mg/kg)	270-800	740-1723

Source:
[1] Codex Standard for named vegetables oils 210 -1999.
[2] Cenipalma 2014.

Table 4. Levels of tocoferols and tocotrienoles in crude oil palm (Elaeis guineensis) and high oleic palm oil

	Palm oil (*Elaeis guineensis*)[1]	Palm oil high in oleic acid[2]
Alpha – tocopherol	4-193	126 – 151
Beta – tocopherol	ND – 234	*(vi) 0,48 – 3,60*
Gamma – tocopherol	ND – 526	ND
Delta – tocopherol	ND – 123	ND
Alpha – tocotrienol	4 – 336	179 – 252
Gamma – tocotrienol	14 – 710	586 - 753
Delta – tocotrienol	ND – 377	33 - 35
Total (mg/kg)	150 – 1500	955 - 1165

Source:
[1] Codex Standard for named vegetables oils 210 -1999.
[2] Cenipalma 2014.

3. Main aspects that should be covered

The proposal to add high oleic palm oil (OxG) would include the following aspects:

- Establishment of general requirements for palm oil high in oleic acid (OxG).
- Establishment of specific requirements for palm oil high in oleic acid (OxG).

[3] M. Mozzon et al. Crude palm oil from interspecific hybrid *Elaeis oleifera x Elaeis guineensis*: Fatty acid regiodistribution and molecular species of glycerides. Food Chemisty 141 (2013) 245-252

- Establishment of the information that must be included in package labels and markings based on Codex Alimentarius guidelines.

Specifically it proposes the inclusion of high oleic palm oil in the following items in the norm:

- 2.1 Product definition. Include the description of the high oleic palm oil.
- 3.3 Slip point – include the slip point of high oleic palm oil.
- Table 1. Include the fatty acid composition of the high oleic palm oil.
- Table 2. Include the chemical and physical characteristics of high oleic palm oil.
- Table 3. Include the levels of desmethylsterols of high oleic palm oil.
- Table 4. Include the levels of tocopherols and tocotrienoles of high oleic palm oil.

4. Assessment against the criteria for the establishment of work priorities

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.

The proposed new standard will meet this criterion by:

- Promoting consumer protection and the prevention of fraudulent practices.
- Providing greater assurance of the quality of the product to meet consumer needs and the minimum requirements for food safety.
- Arriving at levels of standardization based on the properties of different varieties to meet industrial and consumer needs with exactness and credibility.

In addition, the elaboration of the standard would be to the benefit of many countries in particular developing countries, which are the major producers, exporters, and consumers of high oleic palm oil.

Criteria applicable to commodities

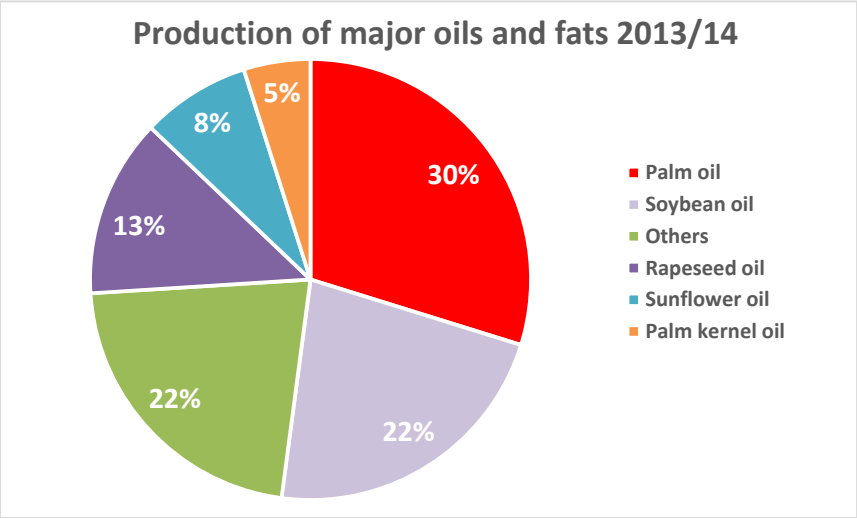
a) Volume of production and consumption in individual countries and volume and pattern of trade relations between countries

World production of the 17 main oils and fats in 2013 was 188.18 million tons, with the largest share of palm oil, soybean, rapeseed, sunflower and palm kernel. In the past 8 years the oil production sector presented a growth of 3,4 % annually, particularly marked by increases in the supply of palm oil and palm kernel oil in Southeast Asia. Palm oil, soybean, rapeseed and sunflower seed are the largest market share with market shares of 29%, 22%, 13% and 7%, respectively.

In this context, the global production of palm oil ranks high considering a volume of 55,9 million tons in 2013 instead, which represents an increase of 6,6 % from the previous year. The main producers are Indonesia, with 46,9 % of production; Malaysia with 29,4 %; and Colombia, with a production of 1,028,000 tons as the fifth largest producer and the first of the Americas.[4]

[4] Source: statistical Yearbook Fedepalma. 2014

Figure 1. Participation in the production of major oils and fats 2013/2014



Source: Statistical Yearbook Fedepalma. 2014

Meanwhile, global consumption of oils and fats maintains its dynamic growth in the last 20 years at an average rate of 4%. Its main use has been strongly linked to the food industry, followed in the last decade, by the biofuel sector consumption, which primarily uses rapeseed oil, soybean and palm oil**.**

According to experts, this dynamic will continue to grow at the rate of population growth and following the trend of the emerging markets of India and China.

According to the above and the new trends in the use of healthy vegetable oils, the potential of oils rich in oleic acid, to participate meaningfully in the oil market for food is evident.

Table 5. Supply and global apparent consumption of the 17 major oils and fats (in thousands of tons)

Product	2006	2007	2008	2009	2010	2011	2012	2013	13/12 % *Growth rate*
I. Production	150.152	154.405	160.227	165.052	172.130	177.752	186.285	188.180	*1,0%*
Palm oil	37.415	39.103	43.572	45.269	45.873	49.516	52.466	55.947	*6,6%*
Soybean oil	35.196	37.330	36.834	36.114	40.181	41.345	42.215	42.140	*-0,2%*
Rapeseed oil	18.446	18.745	19.971	21.718	23.778	24.059	24.434	25.035	*2,5%*
Sunflower oil	11.217	10.926	10.861	13.035	12.428	12.400	15.259	13.571	*-11,1%*
Tallow and greases	8.474	8.530	8.403	8.364	8.465	8.453	8.356	8.485	*1,5%*
Cotton oil	4.933	5.086	5.039	4.697	4.601	4.793	5.146	4.994	*-3,0%*
Palm kernel oil	4.365	4.498	5.022	5.235	5.232	5.397	5.805	6.183	*6,5%*
Groundnut oil	4.416	4.108	4.210	4.158	4.074	4.269	4.098	3.856	*-5,9%*
Coconut oil	3.140	3.198	3.191	3.258	3.629	3.090	3.123	3.451	*10,5%*
Olive oil	2.779	2.907	2.902	3.024	3.331	3.384	3.630	2.586	*-28,8%*
Corn oil	2.270	2.317	2.350	2.319	2.346	2.526	2.690	2.898	*7,7%*
Other oils an fats	17.501	17.658	17.873	17.861	18.192	18.520	19.063	19.034	*-0,2%*
II. Imports	56.108	57.839	61.597	64.252	66.542	67.976	71.890	75.418	*4,9%*
Palm oil	29.342	29.267	33.916	36.335	37.137	38.100	40.367	43.962	*8,9%*
Soybean oil	10.174	11.241	10.722	9.230	9.868	10.156	8.995	9.530	*5,9%*
Sunflower oil	4.308	4.378	3.910	5.148	4.770	5.035	7.155	6.315	*-11,7%*
Palm kernel oil	2.339	2.627	2.671	3.169	3.051	3.030	3.052	3.365	*10,3%*
Tallow and greases	2.201	2.223	2.208	1.956	2.075	2.010	1.675	1.565	*-6,6%*
Rapeseed oil	2.068	2.161	2.375	2.670	3.330	3.567	4.142	4.153	*0,3%*

Coconut oil	2.044	1.993	1.971	1.834	2.333	1.974	1.907	2.082	*9,2%*
Olive oil	747	768	737	725	757	800	893	945	*5,8%*
Corn oil	907	745	716	677	633	730	890	855	*-3,9%*
Groundnut oil	213	163	176	177	226	215	181	189	*4,4%*
Cotton oil	148	149	145	149	151	170	215	201	*-6,5%*
Other oils an fats	1.617	2.124	2.050	2.182	2.211	2.189	2.418	2.256	*-6,7%*
III. Exports	57.509	58.222	60.866	64.126	66.436	67.922	72.101	75.384	*4,6%*
Palm oil	29.941	29.782	33.695	36.206	36.508	38.130	40.354	44.030	*9,1%*
Soybean oil	10.435	11.192	10.093	9.278	10.150	10.032	9.014	9.640	*6,9%*
Sunflower oil	4.467	4.295	4.081	5.176	4.736	4.955	7.300	6.175	*-15,4%*
Palm kernel oil	2.390	2.675	2.715	3.042	3.064	3.068	3.077	3.320	*7,9%*
Tallow and greases	2.153	2.263	2.200	2.000	2.158	2.039	1.668	1.550	*-7,1%*
Rapeseed oil	2.103	2.058	2.331	2.578	3.432	3.610	4.114	4.089	*-0,6%*
Coconut oil	1.987	1.996	1.882	1.857	2.353	1.948	1.922	2.084	*8,4%*
Olive oil	733	761	741	716	779	808	905	940	*3,9%*
Corn oil	888	716	725	689	634	769	895	870	*-2,8%*
Groundnut oil	211	196	147	207	201	208	180	193	*7,2%*
Cotton oil	158	157	143	155	153	174	229	200	*-12,7%*
Other oils an fats	2.014	2.093	2.042	2.186	2.268	2.181	2.443	2.293	*-6,1%*
IV. Available Supply (I+II-III)	148.751	154.022	160.958	165.178	172.236	177.806	186.074	188.214	*1,2%*
V. Change in stocks	1.339	478	1.240	802	517	1.301	2.687	-635	*-123,6%*
IV. Disappearance (IV-V) /	147.412	153.544	159.718	164.376	171.719	176.505	183.387	188.849	*3,0%*
Palm oil	36.125	37.882	42.485	42.638	42.784	48.020	51.229	56.478	*10,2%*
Soybean oil	34.370	36.944	37.823	35.906	39.220	41.597	42.347	42.134	*-0,5%*
Rapeseed oil	18.070	19.024	19.802	21.198	23.507	24.139	24.059	24.251	*0,8%*
Sunflower oil	10.876	11.229	10.517	12.576	12.690	12.516	14.562	13.975	*-4,0%*
Tallow and greases	8.528	8.433	8.428	8.355	8.466	8.438	8.342	8.467	*1,5%*
Cotton oil	4.902	5.067	5.050	4.684	4.611	4.743	5.112	5.045	*-1,3%*
Palm kernel oil	4.176	4.544	4.808	5.399	5.211	5.207	5.575	6.255	*12,2%*
Groundnut oil	4.450	4.114	4.265	4.182	4.046	4.271	4.132	3.889	*-5,9%*
Coconut oil	3.199	3.218	3.266	3.181	3.589	3.238	3.057	3.387	*10,8%*
Olive oil	2.913	3.018	3.027	3.113	3.218	3.292	3.352	3.126	*-6,7%*
Corn oil	2.219	2.362	2.295	2.347	2.386	2.460	2.633	2.846	*8,1%*
Other oils an fats	17.584	17.709	17.952	20.797	21.991	18.584	18.987	18.996	*0,0%*

Source: Oil World Annual 2014", ISTA Mielke GmbH, 2014, Fedepalma – Sispa.

One of the oils that have greater potential for use of the food industry is the palm oil high in oleic acid. The planted areas of this hybrid material are concentrated in countries located in the tropics of Central and South America. Its cultivation has been promoted as the better alternative to the traditional oil palm (*Elaeis guineensis*) infected with BRD.The BRD is a principal disease that affect the palm oil in Americas.

The countries with the largest areas planted with this hybrid are Colombia and Ecuador, which in turn are the most affected by the disease. Today interspecific hybrid material is not only an alternative for disease involvement but a new market option for growers due to the physicochemical characteristics of this oil, as already mentioned.

The area planted up till 2013 is 72,445 hectares. This area has been mostly cultivated in the last 4 years. In the case of Colombia, under production is 30 % of the cultivated area, 42 % in its first year of production and the rest under development (Fedepalma, 2014 – data taken from producers).

Table 6. Area planted and production of hybrid palm OxG

Colombia[1]	Production area (Ha)	Developing area (Ha)	Planted area (Ha)
North	35	--	35
East	6.920	1.660	8.580
Western	2.399	3.100	5.499
Central	13.065	3.266	16.331
Ecuador[2]	Production area (Ha)	Developing area (Ha)	Planted area (Ha)
San Lorenzo	4.253	5.020	9.273
Western	1.250	1.350	2.600
East	11.227	3.199	14.426
Rest of country	3.701	--	3.701
Brazil[3]	Production area (Ha)	Developing area (Ha)	Planted area (Ha)
Total country	--	12.000	12.000
Total	42.850	29.595	72.445

Source:
[1] Fedepalma, comunicación electrónica con productores septiembre de 2014.
[2] Palmar del Río, comunicación electrónica septiembre de 2014.
[3] Comercializadores Internacionales de Aceite, comunicación electrónica octubre 2014

At present, there are few OxG hybrid palm plantations that are into oil extraction process, partly because of the current low production volumes and the difficulty of marketing since there is no international standard to guide the sales.

The production of high oleic palm oil in Colombia in 2013 was 23,000 tons, of which 77% went to the international market and 23 % was used in the country. Meanwhile in Ecuador, there were 92,000 tons/year, from which 9 % were for the export market and 91 % to the local market (ANCUPA, 2014). Table 7 presents the main destinations of exports from Colombia and Ecuador.

Table 7. Main destinations of exports of palm oil high in oleic acid from Colombia and Ecuador

2013	Destination country (Tons)						
Country of origin	Spain	Netherlands	United Kingdom	Mexico	United States	Venezuela	Total
Colombia	2.400	2.000	1.000	12.387	--	--	17.787
Ecuador	1.900	3.500	1.000	500	2.100	3.000	12.500
						Total	29.787

Source:
[1]Colombia: Local traders and Fedepalma, 2014.
[2]Ecuador: International traders, 2014

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

Considering the nutritional profile that has high oleic palm oil, is ideal for direct or incorporated into different food preparations for human consumption. By the physicochemical characteristics of the oil, especially the content of unsaturated fatty acids, this oil is more liquid at room temperature in compared to traditional palm oil, which facilitates inclusion in some food formulations used in cold climates where palm oil traditional not used because of its high melting point.

Additionally, considering that 25% of the oil produced in 2013 was exported to Europe, Mexico and United States, and that these markets appreciate quality of high oleic palm oil for food industry, not include the high oleic palm oil in the Codex Stand 210-1999, will affect the marketing of this oil.

Today, there are two regional standars for the high oleic palm oil, but this norm only influences the Andean Community.

Norma Técnica Andina 0073:2009, High oleic palm oil (OxG). Requirements. This standard establishes the requirements that high oleic edible oil palm (OxG) made from hybrid palms (*Elaeis oleifera x Elaeis guineensis*) must meet. This Andean standard applies to high oleic edible palm oil (OxG) RDB: red and de-

colored. It does not apply to crude palm oil or to the olein and stearin derived from the oil of this hybrid palm *(Elaeis oleifera x Elaeis guineensis*).

Norma Técnica Colombiana NTC 5713:2009, High oleic palm oil OxG (*Elaeis guinensis x Elaeis oleifera*). Requirements. This standard establishes the requirements that high oleic edible oil palm (OxG) made from hybrid palms (*Elaeis oleifera x Elaeis guineensis*) must meet. It applies to high oleic edible palm oil, red or de-colored. It does not apply to crude high oleic palm oil OxG (*Elaeis oleifera x Elaeis guineensis*), or to the olein and stearin derived from this oil.

Resolución 2154 de 2012 del Ministerio de Salud y Protección Social de Colombia, which establishes the technical regulations on the requirements for oils and fats of vegetable or processed, packaged and stored animal origin, including for export, import or marketing in the country, for human consumption.

c) International or regional market potential

As mentioned previously, there are approximately 72,445 hectares of hybrid material OxG planted in Colombia, Ecuador and Brazil. When this whole area is in full production in about three years, the potential for oil production is 275,000 tons/year (Fedepalma - SISPA, 2014).

In Colombia, it is expected that within four years there should be 12,000 hectares of new plantings of OxG hybrid material. This expansion of the area planted with OxG hybrid material, is part of a series of targeted measures aimed at recovering the planted areas of the destructive impact of BRD in different countries affected with this disease. These new areas planted with a potential production of 50,000 tons/year additional, in full production.

In addition, with data supplied by private companies in Ecuador who reported a total of 30,000 hectares of which 20,431 are already in production.

d) Amenability of the commodity to standardization

High oleic palm oil is a product amenable to standardization by the CCFO that has different characteristics compared to traditional palm oil (*Elaeis guinnensis)* and its fractions, specifically in the oleic acid content, vitamin E and beta-carotene. These characteristics have an impact on the uses of this oil in the food industry.

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

The addition of palm oil high in oleic acid to Codex Stan 210-1999, to include essential factors related to composition, health and quality would enable the standardization of oils of this type and contribute to consumer protection.

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

Just as in the standard Codex Stand 210-1999 have been including a variety of oils such as sunflower oil high, medium oleic acid content, is proposing to amend the rule, this time for the case of oils from the palm. It's feasible to amend the standard fulfilling the requirements concerning the proposal of new work.

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

None known to date.

5. Relevance to the Codex strategic objectives

The development of a Codex standard for high oleic palm oil reflects the strategic objective of promoting the maximum application of Codex standards by countries in their national legislations, and facilitating international trade. This proposal is based on scientific considerations and helps stipulate minimum quality requirements for Palm oil high in oleic acid destined for human consumption, with the intention of protecting consumer health and ensuring fair practices in the food trade. The proposal corresponds to Objective 1.1: "Establish new and review existing Codex standards, based on priorities of the CAC" of the Codex Strategic Plan 2014- 2019.

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

None.

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

The proposal of an addition to CODEX STAN 210-1999 uses as reference the information developed by the research group working at the national level in Colombia-Cenipalma on the characterization of edible oils and fats. The Standardization Institute of Ecuador (INEN) also participated in the characterization of this type of oil. Therefore, in the event additional information is required on this project, it is possible to contact this group of experts.

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

None

9. Proposed time-linefor completion of the new work

Calendar	MEETING	PROGRESS
February 2015	CCFO23	Agrees to send the new work proposal to CAC38 for approval
July 2015	CAC38	Approval of new work
February 2017	CCFO24	Discuss Proposed Draft Amendments
July 2017	CAC40	Adoption at Step5
February 2019	CCFO25	Discuss Draft Amendments
July 2019	CAC42	Adoption at Step 8

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