37st Meeting of the Codex Contact Points in the Arab Region

Syrian Olive Oil

Highlights and Decisions from CCFO28

Agenda Item 5

Agenda Item	Subject	Key Discussion	Decisions	Step
5	Proposed Draft Revision To The Standard For Olive Oils And Olive Pomace Oils (CXS 33-1981): Revision Of Sections 3, 8 And	▪CCFO28 agreed to the amended decision tree in footnote b as follows: "(b) When a virgin or extra virgin olive oil naturally has a campesterol level > 4.0% and ≤ 4.8%, it may be considered authentic if the stigmasterol level is ≤ 1.4% and the Δ7-stigmastenol level is ≤ 0.3%. The other parameters shall meet the limits set out in the standard." ▪One member proposed revising the Δ-7-stigmastenol decision tree (footnote c) to accommodate authentic oils from all regions. While recognizing the need for more data to inform future decisions, ▪Syria expressed reservations, noting that some authentic olive oils still fall outside the existing limits for Δ-7 Stigmastenol	▪Forward the draft revised Standard for Olive oils and Olive Pomace oils (CXS 33-1981) (Appendix IX) to CAC47 for adoption at Step 5/8;	Adoption at step 5/8

Syria's Objection and Proposal Regarding ΔECN42 Levels

Objection:

- The current provision in footnote c for Δ-7 Stigmastenol, requiring ΔECN42 ≤ 0.1 for virgin olive oil, excludes over 40% of Syrian authentic virgin olive oil production.
- Syrian virgin olive oil naturally exceeds these limits (ΔECN42 ranges from 0.15–0.16), making compliance unachievable.

Key Issues:

- Lack of flexibility after the removal of the footnote allowing deviations in sterol levels.
- Syrian input into international data (e.g., from the International Olive Oil Council) was limited due to exclusion during years of conflict.
- The decision to adjust campesterol limits request to revise ΔECN42 was ignored.

Request :

- Adjust ΔECN42 in footnote c to ≤ 0.2, aligning with section 3.2.2 of the standard for virgin olive oil.
- Alternatively, suspend the application of footnote c and expand the scope of the proposed EWG to include sterol stu
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eff

3.2.2 ΔECN42 (Difference between the actual and theoretical ECN 42 triglyceride content)	
Extra virgin olive oil Virgin olive oil	≤ |0.20|
Refined olive oil Olive oil composed of refined olive oil and virgin olive oils	≤ |0.30|
Refined olive-pomace oil Olive-pomace oil composed of refined olive-pomace oil and virgin olive oils	≤ |0.50|

(c) For virgin olive oils, if the value is > 0.5 and ≤ 0.8%, campesterol must be ≤ 3.3, apparent β-sitosterol/(campesterol+Δ7-stigmastenol) ≥ 25, stigmasterol ≤ 1.4 and ΔECN42 ≤ |0.1|. For refined olive pomace oils values > 0.5 and ≤ 0.7% then stigmasterol ≤ 1.4% and ΔECN42 ≤ |0.4|.

Table 3 - Fatty acid composition of oils of eleven Syrian olive cultivars. Average values of the three-year period 2004-06±standard error. The IOC trade standard (TS) values for extra virgin olive oils are reported in the last line. Oils were extracted from olive samples collected in November for all the cultivars with the exception of those of the cultivars Khodeiri and Doebli which were extracted from olive samples collected in October.

Area	Cultivar	Palmitic (%)	Palmitoleic (%)	Stearic (%)	Oleic (%)	Linoleic (%)	Linolenic (%)	Arachidic (%)
Aleppo	Kaissy	11.9±0.4	0.69±0.17	3.07±0.26	72.4±1.0	9.7±0.2	0.65±0.03	0.44±0.03
	Zaity	13.8±0.2	0.75±0.05	3.65±0.13	71.8±1.8	8.8±0.2	0.61±0.04	0.54±0.08
Damascus	Dan	13.7±0.4	0.60±0.03	2.14±0.02	71.2±0.9	10.1±0.5	0.71±0.04	0.35±0.02
	Hemplasi	12.7±0.3	0.88±0.03	2.86±0.13	73.7±0.9	7.8±0.1	0.69±0.08	0.45±0.01
	Souri	12.7±0.4	0.67±0.13	2.90±0.21	72.7±1.7	9.4±0.3	0.61±0.09	0.41±0.03
Idleb	Insassy	11.5±0.3	0.36±0.02	3.66±0.12	71.6±0.9	11.5±0.2	0.55±0.01	0.46±0.01
	Karamani	18.4±0.3	1.66±0.11	2.33±0.15	59.9±1.9	14.4±0.6	0.79±0.03	0.42±0.03
	Sorani	14.6±0.5	0.72±0.07	3.40±0.19	68.2±1.9	11.3±0.7	0.70±0.04	0.47±0.03
Lattakia	Khodeiri	13.4±0.3	0.50±0.05	3.93±0.32	71.4±1.7	9.1±0.5	0.55±0.05	0.53±0.02
Mousiaf	Safrawi	12.9±0.4	0.98±0.08	2.69±0.09	70.6±1.2	11.1±0.4	0.50±0.03	0.50±0.01
Tartous	Doebli	14.6±0.2	0.73±0.04	2.97±0.02	69.7±0.8	11.0±0.4	0.53±0.05	0.43±0.02
IOC-TS		7.5- 20.0	0.3-3.5	0.5-5.0	55.0-83.0	3.5-21.0	≤1.0	≤0.6

Table 4 - Sterol composition and content and erythrodiol + uvaol content in the oils of eleven Syrian olive cultivars. Average values of the three-year period 2004-06±standard error. The IOC trade standard (TS) values for extra virgin olive oils are reported in the last line. Oils were extracted from olive samples collected in November for all the cultivars with the exception of those of the cultivars Khodeiri and Doebli which were extracted from olive samples collected in October.

Area	Cultivar	Cholesterol (%)	Brassicasterol (%)	Campesterol (%)	Stigmasterol (%)	β-sitosterol (%)	Δ-7-Stigmastenol (%)	Apparent β-sitosterol (%)	Total sterol (mg/kg oil)	Erythrodiol + Uvaol (% total sterols)
Aleppo	Kaissy	0.05±0.03	0.00±0.00	3.48±0.30	0.67±0.13	86.7±0.4	0.32±0.01	95.0±0.2	1,361±45	1.20±0.10
	Zaity	0.05±0.02	0.00±0.00	3.66±0.31	0.72±0.12	86.4±0.8	0.25±0.03	93.9±0.3	1,270±62	1.38±0.28
Damascus	Dan	0.04±0.02	0.00±0.00	2.76±0.31	0.88±0.16	88.4±0.2	0.30±0.12	95.5±0.3	1,398±132	1.80±0.16
	Hemplasi	0.04±0.02	0.01±0.00	3.28±0.22	0.44±0.11	88.2±0.4	0.28±0.10	95.0±0.4	1,704±161	1.69±0.15
	Souri	0.02±0.01	0.00±0.00	2.30±0.12	0.70±0.10	88.8±0.3	0.37± 0.06	95.7±0.3	1,105±82.2	1.10±0.15
Idleb	Insassy	0.05±0.02	0.00±0.00	3.55±0.45	0.78±0.02	86.8±1.1	0.50±0.02	93.3±0.3	1,382±55	1.90±0.15
	Karamani	0.05±0.02	0.00±0.00	2.81±0.28	0.72±0.15	85.8±0.2	0.30±0.02	95.6±0.2	1,219±85	1.78±0.16
	Sorani	0.05±0.02	0.00±0.00	3.67±0.22	0.71±0.08	86.6±0.3	0.46±0.02	94.4±0.2	1,363±105	1.90±0.50
Lattakia	Khodeiri	0.01±0.01	0.00±0.00	2.55±0.23	0.80±0.19	87.0±0.8	0.57±0.03	[illegible]	1,126±60	2.08±0.20
Mousiaf	Safrawi	0.05±0.02	0.00±0.00	3.45±0.2	0.72±0.06	90.1±0.2	0.28±0.06	94.6±0.2	1,770±111	1.70±0.70
Tartous	Doebli	0.04±0.01	0.00±0.00	2.60±0.25	0.84±0.31	88.7±0.2	0.57±0.05	[illegible]	1,449±182	1.08±0.30
IOC-TS		≤0.5	≤0.1	≤4.0	<campesterol		≤3.5	≥93.0	≥1,000	≤4.5

avenasterol + Δ-5-23-stigmastadienol + clerosterol + sitostanol + Δ-5-24-stigmastadienol) was higher than 93.0%, the IOC trade standard for this parameter.

DISCUSSION AND CONCLUSIONS

The fresh fruit weight and oil content in Zaity, Sorani and Kaissy were substantially similar to values reported in the literature for the same cultivars (TUBEILEH *et al.*, 2004, 2008a,b). The cultivar Dan showed a lower oil content than that reported by TUBEILEH *et al.* (2004); this difference could be due to harvesting time/ripening stage of the olives, since significant increases in oil content can be obtained by delaying harvesting (ABDINE *et al.*, 2007).

The high-medium oil content in Zaity, Sorani, Khodeiri and Doebli indicates their high efficiency in accumulating oil in the fruit which is in agreement with the fact that these cultivars are the main ones for oil production in Syria (these 4 varieties cover about 85% of the total area cultivated with olive) (AL IBRAHEM, 2006). The medium or high fresh fruit weight, as well

Near East Olive Product

Hama - Syria

Date : 18/11/20

Analysis Certificate

Analyzer	NASRI
Classification	IDLIB
No.certificate	22

			Value	unit	Parameter of Reference
Characteristic	Acid value		0.55	%	≤ 0.8
	Peroxide		10.00	meq/02/kg	≤ 20
	Impurities			%	≤ 0.2
	Humidity			%	≤ 0.3
spect	K 232		1.516		≤ 2.6
	K 270		0.145		≤ 0.25
	Delta K		-0.003		≤ 0.01
Fatty acid	Myristic	C14:0	0.014	%	0.03
	Palmitic	C16:0	12.29	%	7.5-20
	Palmitoleic	C16:1	0.59	%	0.3-3.5
	Heptadecanoic	C17:0	0.10	%	0.3
	Heptadecenoic	C17:1	0.15	%	0.3
	Stearic	C18:0	3.17	%	0.5-5
	Oleic	C18:1	71.57	%	55-83
	Linoleic	C18:2	10.85	%	2.5-21
	Linolenic	C18:3	0.48	%	<=1.0
	Arshidic	C20:0	0.402	%	<=0.6
	Gadoleic	C20:1	0.22	%	<=0.4
	Behenic	C22:0	0.10	%	<=0.2
	Trans Oliec		0.003		<= 0.1
	Trans Linoleic+Linolenic		0.036		<= 0.1
	Stigma Stadien		0.019	%	<=0.05
	D-ECN 42		0.14		<=0.2
sterols	Cholesterol		0.28	%	<=0.5
	Campsterol		2.43	%	<=4
	Campstanol		0.10	%	
	Stigmasterol		0.66	%	<Cam
	Clerosterol		1.02	%	
	Betasitosterol		87.21		
	Sitostanol		0.88		
	D5avenasterol		4.51	%	
	Delta 5-24 stigmadienol		0.68	%	
	D7stigmasterol		**0.57**	%	≤ 0.8
	D7avenasterol		1.25	%	
	Erythioditol+Uvaol		2.53	%	<=4.5
	Betasitosterol		94.30		≥ 93
	Total Sterol		1243		≥1000

Laboratory Manager

Hama - Syria

Analysis Certificate

Analyzer NASRI

Classification ALEPPO

No.certificate 21

			Value	unit	Parameter of Reference
Characteristic	Acid value		1.40	%	≤2
	Peroxide		15.00	meq/O2/kg	≤20
	Impurities			%	≤ 0.1
	Humidity			%	≤ 0.2
spect	K 232		1.932		≤ 2.5
	K 270		0.182		≤ 0.22
	Delta K		0.002		≤ 0,01
Fatty acid	Myristic	C14:0	0.013	%	0.03
	Palmitic	C16:0	15.24	%	7.5-20
	Palmitoleic	C16:1	1.08	%	0.3-3.5
	Heptadecanoic	C17:0	0.13	%	0.3
	Heptadecenoic	C17:1	0.16	%	0.3
	Stearic	C18:0	3.15	%	0.5-5
	Oleic	C18:1	70.44	%	55-83
	Linoleic	C18:2	8.22	%	2.5-21
	Linolenic	C18:3	0.72	%	<=1.0
	Arshidic	C20:0	0.42	%	<=0.6
	Gadoleic	C20:1	0.15	%	<=0.4
	Behenic	C22:0	0.13	%	<=0.2
	Trans Oliec		0.005		<= 0.05
	Trans Linoleic+Linolenic		0.045		<= 0.05
	Stigma Stadien		0.03	%	<=0.05
	ECN 42		0.13		<=0.2
sterols	Cholesterol		0.19	%	<=0.5
	Campsterol		2.88	%	≤ 4.5
	Campstanol		0.10	%	
	Stigmasterol		0.95	%	<Cam
	Clerosterol		0.96	%	
	Betasitosterol		86.76		
	Sitostanol		0.67		
	D5avenasterol		4.71	%	
	Delta 5-24 stigmadienol		0.71	%	
	D7stigmasterol		0.55	%	≤ 0.8
	D7avenasterol		0.84	%	
	Eritrodol+Uvaol		3.15	%	≤ 4.5
	Betasitosterol		93.81		≥ 93
	Total Sterol		1394		≥1000

Laboratory Manager

Sample description: Sample 1 - Virgin Olive Oil
Sampling procedure: By the Customer
Quantity of sample: 125 ml
Return of sample: No

TEST NAME	RESULT	U					METHOD				
FREE FATTY ACIDS	1,23		% Oleic Acid								
FATTY ACIDS METHYL ESTERS											
C12:0 - Lauric acid	ND		%								
C14:0 - Myristic acid	0,02		%								
C16:0 - Palmitic acid	13,81		%								
C16:1 - Palmitoleic acid	0,89		%								
C17:0 - Heptadecanoic acid	0,12		%								
C17:1 - Heptadecenoic acid	0,16		%								
C18:0 - Stearic acid	3,52		%								
C18:1 - Oleic acid	68,54		%								
C18:2 - Linoleic acid	11,15		%								
C20:0 - Arachidic acid	0,54		%								
C18:3 - Linolenic acid	0,73		%								
C20:1 - Eicosenoic acid	0,30		%								
C22:0 - Behenic acid	0,14		%								
C22:1 - Erucic acid	ND		%								
C24:0 - Lignoceric acid	0,08		%								
TRANS FATTY ACIDS CONTENT											
C18:1 - Elaidinic	0,02		%								
C18:2 + C18:3	0,02		%								
TRIGLYCERIDES WITH ECN42 in %											
L.L.L	0,30		%								
O.L.Ln	0,34		%								
P.L.Ln	0,08		%								
Sum ECN-42 HPLC	0,72		%								
Theoretical ECN-42	0,62		%								
Difference	0,15		%								
STEROLS AND TRITERPENE ALCOHOLS											
Cholesterol	0,1		%								
Brassicasterol	ND		%								
24-Methylenecholesterol	0,1		%								
Campesterol	2,8		%								
Campestanol	0,1		%								
Stigmasterol	1,2		%								
Delta-7-Campesterol	ND		%								

TEST REPORT No. 2230049

Monopoli, 13/12/2022

Sample reception 07/12/2022

Analysis starting date 07/12/2022

CUSTOMER
Agrioil DMCC
Platinum Tower
Dubai

Sample description
Delivered by: dhl 3405607004
Sample description: Sample 1 - Virgin Olive Oil
Sampling procedure: By the Customer
Quantity of sample: 125 ml
Return of sample: No

TEST NAME	RESULT	U		LOD	LOQ	%	METHOD	LIMIT VALUE	
Delta 5,23 Stigmastadienol	ND		%		0,1		2430-C		
Clerosterol	1,1	±0,1	%		0,1		2430-C		
Betasitosterol	85,3	±1,0	%		0,1		2430-C		
Sitostanol	0,9	±0,1	%		0,1		2430-C		
Delta-5-Avenasterol	6,0	±0,1	%		0,1		2430-C		
Delta 5,24 Stigmastadienol	0,7	±0,1	%		0,1		2430-C		
Delta-7-Stigmastenol	0,7	±0,1	%		0,1		2430-C	≤ 0,5 (1)	FL
Delta-7-Avenasterol	1,0	±0,2	%		0,1		2430-C		
TOTAL BETASITOSTEROL	94,0	±0,3	%		0,1		2430-C	≥ 85,0 (1)	
TOTAL STEROLS CONTENT	1538	±64	mg/kg		1		2430-C	≥ 1000 (1)	
ERYTHRODIOL AND UVAOL	2,5	±0,6	%				2430-C	≤ 4,5 (1)	
WAXES (C42+C44+C46)	51,1	±1,5	mg/kg		1		2435-C	≤ 150 (1)	

References for limits
(1) COI/T.15/NC No 3/Rev. 17 November 2021

Analysis performed at:
A: Via Vecchia Ospedale, 11 - 70043 Monopoli (BA)

Legend
ND: It indicates that the analyte results as "Not Detected" through the analysis performed with the specified method or "<LOD" where it is indicated
M2f: = The cold solvent method using indicator has been applied for the free acidity determination except for the hard fats for which the hot ethanol method using indic
been used.
FL: = Dunlar
U: Extended uncertainty, expressed in the same units of measurement as the result, calculated by using a coverage factor k = 2 (unless otherwise specified) for asse
and close to 95%; otherwise, for microbiological tests and for airborne asbestos fibers tests, a confidence interval at the 95% probability level. For microbiological tes
from a count on the sample, on the initial suspension or on the first dilution between 4 and 9 (included) is considered "estimated". Food: for quantitative microbiologic
measurement uncertainty is reported, estimated according to ISO 19036 as standard uncertainty multiplied by a coverage factor k = 2 and an approximate level of co
combined standard uncertainty is assumed to be equal to the intra-laboratory reproducibility standard deviation. Water: for quantitative microbiological tests, the confid
result calculated as indicated in the ISO 8199 standard is reported. LOD: Limit of Detection, defined as the lowest concentration of the analyte in a sample that can be
quantified, under the specified conditions; expressed in the test report as: "ND". LOQ: Limit of Quantitation, the lowest concentration of the analyte in a sample that ca
acceptable precision and accuracy. R%: Average percentage recovery (it is not used to correct the analytical data on pesticides, metals and mycotoxins). Fw: Revision
Report which identifies the Amendment. The amendment replaces and cancels all previous versions of the Test Report.

Methods:
338-C = AOCS Ch 8-02:2017
3405-C = COI/T.20/Doc. No 28 Rev. 5 June 2020
377B-C = AOCS Ce 2-66:2009 + AOCS Ce 1a-13:2017
398-C = COI/T.20 Doc. n. 20/Rev 4 2017
21-C = ISO 660:2020

3.2.3 4α-Desmethylsterols composition (% total 4α-desmethylsterols)

Footnote (h)

38. A Member expressed concern with the use of "it may be considered" instead of "it is considered" in relation to the outcome resulting from the application of the decision tree to virgin and extra virgin olive oils that deviated from the stated provision for campesterol, i.e. whether an oil could be considered authentic or not. The Member noted that in their view the wording left the outcome of the decision tree open to interpretation and proposed to revert to "it is considered", which was used in the current version of the standard.

39. Members, noting that the intent was that oil meeting the criteria of the decisions tree would be considered as authentic, supported the proposal as it provided clarity.

Footnote (c)

40. The Syrian Arab Republic, in recalling their comments in CRD10 and reservation expressed in REP24/FO paragraph 74, highlighted their concerns regarding the footnote, indicating that:

- this footnote corresponded to the International Olive Council (IOC) decision tree, which was developed without their contribution;
- adopting the revisions to CXS 33-1981 with this footnote would, in its view, lead to the incorrect characterization of olive oil produced in their country as a non-authentic oil; and
- such an incorrect characterization would pose a risk to more than 40% of virgin olive oil exports from their country, negatively impact producers, and run contrary to the Codex Alimentarius' objective of ensuring fair practices in international food trade.

41. The Syrian Arab Republic therefore proposed adopting the standard at Step 5 to allow for submission of data to validate the decision tree.

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[11] CX/CAC 24/47/4 & Add.1; CRD05 (International Olive Council (IOC)); CRD10 (Argentina, Bangladesh, Benin, Cabo Verde, India, Philippines, Senegal, South Africa, Syrian Arab Republic, United Republic of Tanzania, East African Community (EAC) and The Global Organization for EPA and DHA Omega-3s (GOED)); CRD29 (Panama); CRD30 (Mexico); CRD32 (Nigeria); CRD33 (Indonesia); CRD35 Rev.1 (Bahrain, Egypt, Iraq, Jordan, Lebanon, Libya, Oman, Sudan and Yemen); CRD36 (African Union); CRD37 (Kenya); CRD42 (Ghana); CRD44 (Burundi); CRD45 Rev.1 (Mauritius); CRD49 (Ecuador)

- issue a CL for data collection on inter-regional variability and the applicability of the decision tree as defined in footnote (c); and

- submit the data to FAO with a view towards convening an expert working group to analyse the data and its applicability to footnote (c), time and resources permitting

50. The Representative of FAO indicated FAO's willingness to lead or accompany any consultative process to evaluate the potential next steps of data gathering and analysis, in order to find the modality of data collection that would serve the interests of and allowed the engagement of all Members and stakeholders.

51. This approach of data collection was broadly supported.

52. While supporting the data collection efforts, the Syrian Arab Republic and Algeria nevertheless expressed their reservation to the adoption of CXS 33-1981 at Step 5/8 for the reasons mentioned in para. xxx.

Conclusion

53. CAC47:

i. adopted, at Step 5/8, the revised *Standard for olive oils and olive pomace oils* (CXS 33-1981), with an amendment to Section 3.2.3 4α-Desmethylsterols composition (% total 4α-desmethylsterols), footnote (b) to replace "it may be considered" to "it is considered" and noted the reservations of Algeria and the Syrian Arab Republic;