

CODEx ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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Agenda Item 5

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**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FATS AND OILS
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Comments from USPC**

USPC (the United States Pharmacopeial Convention) produces the Food Chemicals Codex and has developed monograph standards, analytical methods, and supporting guidance documents for over 1,500 food additives and ingredients, including olive oils and olive pomace oils. The cornerstone of every standard is the methodology applied to that substance to assure quality and safety of the food ingredient or product. Upon reviewing the methods of analysis used for olive oil, it is apparent that the majority of these methods are from IOC, ISO and AOCS. An important part of the acceptance process is the endorsement of methods of analysis by CCMAS. The tables of methods contained in the revised version of CXS 33 will be evaluated as part of this process.

The table below is USPC's proposed revision of the tables taken from the revised version of CXS 33, considering comments on methodology made by IOC during the EWG process, and superficial comparisons of current ISO and AOCS methods. The "type" of method was determined according to Codex principles and is based on perceived use and frequency of updates. The guidance document "Comprehensive guidance for the process of submission, consideration and endorsement of methods for inclusion in CXS 234" was used to determine the use of the correct separators.

Comments that arose during this review can be found in the additional column titled "Comments" and could be addressed through cooperation between different method developers.

USPC appreciates the opportunity to provide these proposed revisions and comments.

Matrix	Provision	Method(s)	Principle	Type	Comment
Olive Oils and Olive Pomace Oils	Absorbance in the ultraviolet region (including rK, K ₂₃₂)	COI/T.20/Doc. No. 19	UV absorption	II	
		ISO 3656	UV absorption	III	
		AOCS Ch 5-91	UV absorption	III	
Olive Oils and Olive Pomace Oils	Acidity, free (acid value)	ISO 660 / AOCS Cd 3d-63	Titrimetry	I	IOC proposes COI/T.20/Doc. no.34; AOCS Ca 5a-40
Olive Oils and Olive Pomace Oils	Alpha-tocopherol	ISO 9936	HPLC	II	
		AOCS Ce 8-89	HPLC	III	
Olive Oils and Olive Pomace Oils	Difference between the actual and theoretical ECN 42 triglyceride content	COI/T.20/Doc. no. 20 / AOCS Ce 5b-89	Analysis of triglycerides of HPLC and calculation	I	Is the AOCS method identical?
Olive Oils and Olive Pomace Oils	Erythrodiol + uvaol	COI/T.20/Doc.no. 30	Gas chromatography	II	See sterol method proposal (IOC method include E + U)
Olive Oils and Olive Pomace Oils	Halogenated solvents, traces	COI/T.20/Doc. no. 8	Gas chromatography	II	
		ISO 16035	Gas chromatography	III	
Olive Oils and Olive Pomace Oils	Fatty acid composition	COI/T.20/Doc. no. 33	Gas chromatography	II	
		AOCS Ch 2-91	Gas chromatography	III	
		ISO 12966-2 and ISO 12966-4	Gas chromatography	III	
Olive Oils and Olive Pomace Oils	Insoluble impurities in light petroleum	ISO 663 / AOCS Ca 3a-46	Gravimetry	I	Are the two method identical?
Olive Oils and Olive Pomace Oils	Iodine value	ISO 3961 / AOAC 993.20 / AOCS Cd 1d-92 / NMKL 39	Wijs-Titrimetry	I	Are these methods identical?
Olive Oils and Olive Pomace Oils	Iron and copper	ISO 8294	AAS	II	
		AOAC 990.05	AAS	III	
Olive Oils and Olive Pomace Oils	Lead	ISO 12193	AAS	II	

Pomace Oils		AOAC 994.02	AAS	III	
		AOCS Ca 18c-91	AAS	III	
Olive Oils and Olive Pomace Oils	Moisture and volatile matter	ISO 662 / AOCS Ca 2c-25	Gravimetry	I	Are these methods identical?
Olive Oils and Olive Pomace Oils	Organoleptic characteristics	COI/T.20/Doc. no. 15	Panel test	I	
Olive Oils and Olive Pomace Oils	Peroxide value	ISO 3960 / AOCS Cd 8b-90	Titrimetry	I	IOC proposes COI/T.20/Doc. no. 35 using acetic acid/chloroform
Olive Oils and Olive Pomace Oils	Relative density	IUPAC 2.101, with the appropriate conversion factor. See comment above	Pycnometry	I	Replace with ISO/AOCS methods ISO 6883 / AOCS Cc 10c-95
Olive Oils and Olive Pomace Oils	Refractive index	ISO 6320	Refractometry	II	
		AOCS Cc 7-25	Refractometry	III	
Olive Oils and Olive Pomace Oils	Saponification value	ISO 3657 / AOCS Cd 3-25	Titrimetry	I	
Olive Oils and Olive Pomace Oils	Sterol composition and total sterols	COI/T.20/Doc. no. 30 / ISO 12228-2	Gas chromatography	II	Final paper suggests COI/T.20/Doc. No 26 and includes erythrodiol and uvaol (Unlikely that these additional compounds will be covered by the current ISO or AOCS method)
		AOCS Ch 6-91	Gas chromatography	III	

Olive Oils and Olive Pomace Oils	Stigmastadienes	COI/T.20/Doc. no. 11	Gas chromatography	II	
		ISO 15788-1	Gas chromatography	III	
		AOCS Cd 26-96	Gas chromatography	III	
Olive Oils and Olive Pomace Oils	Stigmastadienes	ISO 15788-2	HPLC	III	
Olive Oils and Olive Pomace Oils	<i>trans</i> Fatty acid content	COI/T.20/Doc no. 17	Gas chromatography of methyl esters	II	Replaced by COI/T.20/Doc no. 33
		ISO 15304	Gas chromatography of methyl esters		Withdrawn replaced by ISO 12966-4 (Type III)
		AOCS Ch 2a-94	Gas chromatography of methyl esters	III	Could be replaced by AOCS Ce 1h-05 (Type III); this method includes <i>trans</i> fatty acids
Olive Oils and Olive Pomace Oils	Unsaponifiable matter	ISO 3596 / ISO 18609 / AOCS Ca 6b-53	Gravimetry	I	If same solvent is used
Olive Oils and Olive Pomace Oils	Wax content	COI/T.20/Doc. no. 18	Gas chromatography	II	Replace with COI/T.20/Doc. no. 28 or no. 31
		AOCS Ch 8-02	Gas chromatography	III	
Olive Oils and Olive Pomace Oils	Percentage of 2-glycerol monopalmitate	COI/T.20/Doc. no. 20	Gas chromatography	II	
		ISO 12872	Gas chromatography	III	
Olive Oils and Olive Pomace Oils	1,2 Diglycerides	ISO 29822	Gas chromatography	II	
Olive Oils and Olive Pomace Oils	Pyropheophytin "a"	ISO 29841	HPLC	II	