CODEX ALIMENTARIUS COMMISSION

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World Health Organization

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Agenda item 8.1 **CX/FO 26/29/8 Add.1**

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FATS AND OILS

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REVISION TO THE *STANDARD FOR OLIVE OIL AND OLIVE POMACE OIL* (CXS 33 - 1981)

COLLECTION AND SUBMISSION OF SCIENTIFIC DATA AND INFORMATION ON OLIVE OIL

(Prepared by the Electronic Working Group chaired by Italy, and co-chaired by Australia, Canada, Saudi Arabia, and USA)

A. Introduction

Terms of reference

1. The Electronic Working Group (EWG) on the Collection and submission of scientific data and information on olive oil was established by the 28th Session of the Codex Committee on Fats and Oils (CCFO28), chaired by Italy and co-chaired by Australia, Canada, Saudi Arabia, and the United States of America (USA).

2. The terms of reference for the EWG were:

   a) to collect global scientific data and information on olive oil, focusing on free fatty acids, fatty acid ethyl esters (FAEE), acidity, peroxides, and sensory defects, taking into account the influence of time, temperature, light exposure, UV exposure, and oxygen exposure on the values of 1,2-diglycerides (DAGs) and Pyropheophytin "a" (PPPs);

   b) to assess the collected data and information for suitability and make recommendations to CCFO on the need and process for further analysis; and

   c) to submit the report of the EWG on the collected data at least three (3) months before CCFO29.

Methodology for undertaking the work

3. The EWG developed a template for data collection that included: the above-mentioned parameters; the methods of analysis to be used when collecting the data; and other characteristics.

4. The template (Appendix I) was uploaded onto the Codex Online Commenting (OCS) platform where the registered members (including observers) of the EWG uploaded the requested information.

5. Following the development of the template, a circular letter, CL 2024/36-FO requesting the submission of scientific data and information on olive oil, was issued in May 2024 with a deadline of 30 September 2025.

B. Participation

6. Eight (8) Codex members and one observer, as indicated in Appendix II, submitted data in reply to CL 2024/36-FO. The data collected is available in Annex I (EWG Olive Oil - Zipper folder) or (EWG Olive Oil – Dropbox)

C. Data submission, progress and observations

7. Appendix I indicates the summary of the data submitted. Most of the data submissions adhered to the recommended protocol, although some Members were unable to provide complete datasets including FAEE and sensory analysis. Australia, the United States, Spain, and Türkiye followed the protocol in full or substantially, ensuring consistency and comparability of results.

8. The International Olive Council (IOC) provided a compilation of scientific literature and studies, complementing the dataset collection with background references.

D. Conclusion

9. The EWG collected a substantial amount of scientific data and information on olive oil, with particular attention to the evolution of PPP and 1,2-DAG values in individual samples over time. These parameters were considered in conjunction with the other quality criteria established in CXS 33-1981, allowing Members to understand how these indicators developed and interacted throughout the shelf life of olive oil. This information may form the basis for assessing whether the collected dataset is adequate to support further analytical work and for determining the most appropriate next steps.

10. During the data-gathering phase, some Members indicated that they would benefit from having additional time to submit data in accordance with the recommended collection protocol. They noted that more time could help expand the dataset and improve its representativeness across different production regions and categories of olive oil. However, following the consultation with Members, it became clear that views on this matter were not uniform. While some Members expressed the need for an extension, other considered the data already collected sufficient for the EWG to fulfil its mandate under the ToR, namely, to assess the completeness and suitability of the dataset and report progress to CCFO29, which will determine whether further expert analysis is needed.

11. Given the absence of a clear and unanimous position, the EWG considered it important to adopt an approach that would allow progress to continue while leaving room for further improvement of the evidence base. For this reason, it is recommended that additional data continue to be collected over the coming months, while in parallel the analysis of the datasets already submitted is initiated. This approach would make it possible to advance the work without unnecessary delays, while also ensuring that new information can be incorporated as it becomes available, thereby contributing to a more robust and comprehensive assessment.

12. It is also relevant to note that some Members expressed a preference for carrying out data analysis within the framework of this EWG instead of doing the analysis by FAO expert consultation as agreed by CCFO28. Members highlighted that working through the EWG offers practical advantages: it allows datasets to be examined collectively and transparently; it provides a structured and inclusive mechanism for Members to exchange views and technical observations; and it offers the flexibility to integrate new data as it is submitted.

13. For these reasons, it is suggested to discuss whether the EWG should continue to gather additional data while determining the approach to be taken on further analysis of both the existing datasets and any new submissions received during the ongoing work. This dual-track approach offers the advantage to advance without postponing the analysis steps, while ensuring that the evidence base continues to be strengthened.

14. Given the differing positions expressed during the consultation, and the implications for the future direction of the work, the EWG proposes that these issues be further examined and discussed in detail to assess the feasibility of the proposed approach and agree on the most appropriate path forward for the continuation of this work.

E. Recommendation

15. CCFO29 is invited to consider:

    a. whether the progress made by the EWG in data collection was sufficient to support further analysis;

    b. whether further data analysis should be carried out within the EWG or through FAO expert consultation as agreed by CCFO28; and

    c. re-establishing the EWG with a ToR to continue gathering additional data and to undertake the analysis of both the existing datasets and any new submissions received during the ongoing work.

APPENDIX I

RECOMMENDED PROTOCOL FOR DATA COLLECTION ON THE EVOLUTION OF THE CONTENT OF PPP AND 1,2 DAG IN EXTRA VIRGIN OLIVE OILS OVER TIME

Beginning at the time of extraction (after settling and/or filtration or blending/bottling) and at three monthly intervals measure the following quality parameters using the appropriate analytical method:

Parameter	Method
1,2 DAGs	COI/T.20/Doc. No 32 or ISO 29822[1]
PPP	ISO 29841
Acidity, free acid value (FFA)	ISO 660 / COI/T.20/Doc. No 34/Rev. 1 / AOCS Cd 3d-63
Peroxide value	COI/T.20/Doc. No 35 or ISO 3960 / AOCS Cd 8b-90
Absorbency in ultra-violet – (K_{232} K_{270} and delta K)	COI/T.20/Doc. No. 19 or ISO 3656 or AOCS Ch 5- 91
FAEE (Fatty acid ethyl ester content)	COI/T.20/Doc. No 28
Organoleptic characteristics (panel test)	COI/T.20/Doc. no. 15

Data should be taken at: T=0, T=3, T=6, T=9, T=12, T=15, T=18, T=21 and T=24 months. Provide also information on:

- Variety/varieties;
- Olive maturity index (indicate the method used for calculation)*;
- Date of harvest and date of milling **;
- Post extraction treatment (e.g. filtration/settling);
- Date of blending/bottling;
- Temperature of storage during study period;
- exposure to light (e.g. dark, ambient light, artificial light for 8 h day, etc) during study period;
- Type and size of container in which the oil is stored (e.g. clear glass bottle, dark glass bottle, metal, transparent PET, etc.);
- Volume of air on top of the bottle; indicate if bottles are purged with an inert gas;
- Any other parameters that may influence the results.

For supply chain monitoring of blended extra virgin olive oil products, the same protocol can be used beginning at the time of bottling.

Data provided preferably should be accompanied by a certificate issued by a laboratory authorized by the national authority. Information about the laboratory/panel which performs the analysis shall be provided (country, name of the laboratory, address, email, accreditation/recognition status).

(*) Not for blended oils.

(**) In case of a blend, the information to be provided are referred to all oils.

[1] The method used shall be indicated. Note that the two methods are not identical and may show variability in their results, therefore the method chosen shall be consistently used for the whole data collection.

Template for data collection (the data must be filled in in an Excell sheet):

Sample ID	**Monthly (Time)**	**DAGs (% 1,2 DAG)** **(note: the method used shall be indicated and shall be consistently used throughout the entire data collection)**	**PPP** **(% PPP)**	**FFA** **(% m/m as oleic acid)**	**PV** **(milliequivalents of active oxygen per kg/oil)**	**FAEE** **(mg/kg)**	**UV - K_{232}**	**UV K_{270}**	**UV ΔK**	**Sensory analysis: (median of fruitiness attribute)**	**Sensory analysis: (median of defect mostly perceived (if present – specify type)**
	T=0										
	T=3										
	…….										

APPENDIX II

Summary Table of Submissions

Member/Observer	Summary of Submitted Data
Australia	24 datasets; recommended data collection protocol followed.
Chile	2 datasets analyzed – only PPP (no DAGs); recommended data collection protocol partially followed (missing FAEE and sensory analysis).
Egypt	Data not suitable for further analysis (no PPP or DAGs values were provided that could be correlated with other analytical parameters).
Italy	8 datasets; recommended data collection protocol partially followed (missing FAEE and sensory analysis).
New Zealand	8 datasets; recommended data collection protocol partially followed (missing FAEE and sensory analysis).
Spain	16 datasets; recommended data collection protocol followed.
Türkiye	19 datasets; recommended data collection protocol followed for a 3-month evolution period.
USA	51 datasets; recommended data collection protocol followed.
IOC	Compilation of scientific studies on PPP and DAGs; no direct data transmitted.