Commission Implementing Regulation (EU) 2015/1833 of 12 October 2015 amending Regulation (EEC) No 2568/91 on the characteristics of olive oil and olive-residue oil and on the relevant methods of analysis

COMMISSION IMPLEMENTING REGULATION (EU) 2015/1833

of 12 October 2015

amending Regulation (EEC) No 2568/91 on the characteristics of olive oil and olive-residue oil and on the relevant methods of analysis

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007[(1)], and in particular point (d) of the first paragraph and the second paragraph of Article 91 thereof,

Whereas:

(1) Commission Regulation (EEC) No 2568/91[(2)] defines the physico-chemical and organoleptic characteristics of olive and olive-pomace oil and lays down methods of assessing those characteristics. Those methods are regularly updated on the basis of the opinion of chemical experts and in line with the work carried out within the International Olive Council (IOC).

(2) In order to ensure the implementation at Union level of the most recent international standards established by the IOC, certain methods of analysis set out in Regulation (EEC) No 2568/91 should be updated.

(3) In the light of the experience it appears that the method for the detection of extraneous vegetable oils in olive oils may produce false positives. Therefore, references to that method should be deleted.

(4) Regulation (EEC) No 2568/91 should therefore be amended accordingly.

(5) The measures provided for in this Regulation are in accordance with the opinion of the Committee for the Common Organisation of the Agricultural Markets,

HAS ADOPTED THIS REGULATION:

Article 1

Regulation (EEC) No 2568/91 is amended as follows:

(1) Article 2(1) is amended as follows:

(a) the first subparagraph is amended as follows:

(i) point (g) is replaced by the following:

(g) for the determination of the fatty acid composition, the method set out in Annex X;;

(ii) point (l) is replaced by the following:

(l) for the determination of the aliphatic and triterpenic alcohols content, the method set out in Annex XIX;;

(b) the second subparagraph is deleted;

(2) the summary of the Annexes is amended as follows:

(a) the references to Annex X A and Annex X B, including the titles of those Annexes, are replaced by the following single reference:

Annex X Determination of fatty acid methyl esters by gas chromatography;

(b) in the reference to Annex XIX, the title is replaced by the following: Determination of aliphatic and triterpenic alcohols content by capillary gas chromatography;

(c) the reference to Annex XXa is deleted;

(3) Appendix 1 to Annex Ib is amended in accordance with Annex I to this Regulation;

(4) Annex V is amended in accordance with Annex II to this Regulation;

(5) Annex IX is replaced by the text set out in Annex III to this Regulation;

(6) Annexes X A and X B are replaced by the text set out in Annex IV to this Regulation;

(7) Annex XII is amended in accordance with Annex V to this Regulation;

(8) Annex XIX is amended in accordance with Annex VI to this Regulation;

(9) Annex XXa is deleted.

Article 2

This Regulation shall enter into force on the third day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 12 October 2015.

For the Commission

The President

Jean-Claude JUNCKER

***Changes to legislation:** There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2015/1833. (See end of Document for details)*

ANNEX I

In Appendix 1 to Annex Ib to Regulation (EEC) No 2568/91, the table of equivalence is amended as follows:

(1) the rows relating to trans isomers of fatty acids and fatty acids content are replaced by the following:

— Trans isomers of fatty acids	Annex X	Determination of fatty acid methyl esters by gas chromatography
— Fatty acids content	Annex X	Determination of fatty acid methyl esters by gas chromatography

(2) the row relating to alipahatic alcohols is replaced by the following:

— Aliphatic and triterpenic alcohols	Annex XIX	Determination of aliphatic and triterpenic alcohols content by capillary gas chromatography

ANNEX II

In Annex V to Regulation (EEC) No 2568/91, point 6.2 is replaced by the following:

6.2. Calculate the percentage of each individual sterol from the ratio of the relevant peak area to the total peak area for sterols:

$$sterol_x = \frac{A_x}{\sum A} \times 100$$

where:

A_x = peak area for x;
ΣA = total peak area for sterols.

ANNEX III

ANNEX IX

SPECTROPHOTOMETRIC INVESTIGATION IN THE ULTRAVIOLET

FOREWORD

Spectrophotometric examination in the ultraviolet can provide information on the quality of a fat, its state of preservation and changes brought about by technological processes. The absorption at the wavelengths specified in the method is due to the presence of conjugated diene and triene systems resulting from oxidation processes and/or refining practices. These absorptions are expressed as specific extinctions

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$E_{1\,\%}^{1\,cm}$
(the extinction of 1 % w/v solution of the fat in the specified solvent, in a 10 mm cell) conventionally indicated by K (also referred to as "extinction coefficient").

1. SCOPE

This Annex describes the procedure for performing a spectrophotometric examination of olive oil in the ultraviolet region.

2. PRINCIPLE OF THE METHOD

A sample is dissolved in the required solvent and the absorbance of the solution is measured at the specified wavelengths with reference to pure solvent.

The specific extinctions at 232 nm and 268 nm in iso-octane or 232 nm and 270 nm in cyclohexane are calculated for a concentration of 1 % w/v in a 10 mm cell.

3. EQUIPMENT

3.1. A spectrophotometer suitable for measurements at ultraviolet wavelengths (220 nm to 360 nm), with the capability of reading individual nanometric units. A regular check is recommended for the accuracy and reproducibility of the absorbance and wavelength scales as well as for stray light.

3.1.1. *Wavelength scale:* This may be checked using a reference material consisting of an optical glass filter containing holmium oxide or a holmium oxide solution (sealed or not) that has distinct absorption bands. The reference materials are designed for the verification and calibration of the wavelength scales of visible and ultraviolet spectrophotometers having nominal spectral bandwidths of 5 nm or less. The measurements are carried out against an air blank over the wavelength range of 640 to 240 nm, according to the instructions enclosed with the reference materials. A baseline correction is performed with an empty beam path at every slit width alteration. The wavelengths of the standard are listed in the certificate of the reference material.

3.1.2. *Absorbance scale:* This may be checked using commercially available sealed reference materials consisting of acidic potassium dichromate solutions, in certain concentrations and certified values of absorbance at its λmax (of 4 solutions of potassium dichromate in perchloric acid sealed in four UV quartz cells to measure the linearity and photometric accuracy reference in the UV). The potassium dichromate solutions are measured against a blank of the acid used, after baseline correction, according to the instructions enclosed with the reference material. The absorbance values are listed in the certificate of the reference material.

Another possibility in order to check the response of the photocell and the photomultiplier is to proceed as follows: weigh 0,2000 g of pure potassium chromate for spectrophotometry and dissolve in 0,05 N potassium hydroxide solution in a 1 000 ml graduated flask and make up to the mark. Take precisely 25 ml of the solution obtained, transfer to a 500 ml graduated flask and dilute up to the mark using the same potassium hydroxide solution.

Measure the extinction of the solution so obtained at 275 nm, using the potassium hydroxide solution as a reference. The extinction measured using a 1 cm cuvette should be 0,200 ± 0,005.

3.2. Rectangular quartz cuvettes, with covers, suitable for measurements at the ultraviolet wavelengths (220 to 360 nm) having an optical path-length of 10 mm. When filled with water or other suitable solvent the cuvettes should not show differences between them of more than 0,01 extinction units.

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3.3. One- mark volumetric flasks, capacity 25 ml, class A.

3.4. Analytical balance, capable of being read to the nearest 0,0001 g

4. REAGENTS

During the analysis, unless otherwise stated, use only reagents of recognised analytical grade and distilled or demineralised water or water of equivalent purity.

Solvent: Iso-octane (2,2,4 trimethylpentane) for the measurements at 232 nm and 268 nm and cyclohexane for the measurements at 232 nm and 270 nm, having an absorbance less than 0,12 at 232 nm and less than 0,05 at 270 nm against distilled water, measured in a 10 mm cell.

5. PROCEDURE

5.1. The sample must be perfectly homogeneous and without suspended impurities. If not, it must be filtered through paper at a temperature of approximately 30 °C.

5.2. Weigh accurately approximately 0,25 g (to the nearest 1 mg) of the sample so prepared into a 25 ml graduated flask, make up to the mark with the specified solvent and homogenise. The resulting solution must be perfectly clear. If opalescence or turbidity is present, filter quickly through paper.

NOTE: Generally, a mass of 0,25 to 0,30 g is sufficient for absorbance measurements of virgin and extra virgin olive oils at 268 nm and 270 nm. For measurements at 232 nm, 0,05 g of sample are usually required, so two distinct solutions are usually prepared. For absorbance measurements of olive pomace oils, refined olive oils and adulterated olive oils, a smaller portion of sample, e.g. 0,1 g is usually needed due to their higher absorbance.

5.3. If necessary, correct the baseline (220-290 nm) with solvent in both quartz cells (sample and reference), then fill the sample quartz cell with the test solution and measure the extinctions at 232, 268 or 270 nm against the solvent used as a reference.

The extinction values recorded must lie within the range 0,1 to 0,8 or within the range of linearity of the spectrophotometer which should be verified. If not, the measurements must be repeated using more concentrated or more dilute solutions as appropriate.

5.4. After measuring the absorbance at 268 or 270 nm, measure the absorbance at λmax, λmax + 4 and λmax – 4. These absorbance values are used to determine the variation in the specific extinction (ΔK).

NOTE: λmax is considered to be 268 nm for isooctane used as solvent and 270 nm for cyclohexane.

6. EXPRESSION OF THE RESULTS

6.1. Record the specific extinctions (extinction coefficients) at the various wavelengths calculated as follows:

$$K\lambda = \frac{E\lambda}{c \times s}$$

where:

Kλ	=	specific extinction at wavelength λ;
Eλ	=	extinction measured at wavelength λ;
c	=	concentration of the solution in g/100 ml;
s	=	path length of the quartz cell in cm;

expressed to two decimal places.