Commission Implementing Regulation (EU) 2016/1227 of 27 July 2016 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) 2016/1227

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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 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, the method for the determination of free acidity and the method related to the organoleptic assessment of virgin olive oils set out in Regulation (EEC) No 2568/91 should be updated.

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

(4) 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) Annex II is replaced by the text set out in Annex I to this Regulation;

(2) Annex XII is amended in accordance with Annex II to this Regulation.

Article 2

This Regulation shall enter into force on the seventh 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, 27 July 2016.

For the Commission

The President

Jean-Claude JUNCKER

***Changes to legislation:** There are currently no known outstanding effects for the Commission Implementing Regulation (EU) 2016/1227. (See end of Document for details)*

ANNEX I

ANNEX II

DETERMINATION OF FREE FATTY ACIDS, COLD METHOD

1. SCOPE AND FIELD OF APPLICATION

This method describes the determination of free fatty acids in olive oils and olive pomace oils. The content of free fatty acids is expressed as acidity calculated as the percentage of oleic acid.

2. PRINCIPLE

A sample is dissolved in a mixture of solvents and the free fatty acids present titrated using a potassium hydroxide or sodium hydroxide solution.

3. REAGENTS

All the reagents should be of recognized analytical quality and the water used either distilled or of equivalent purity.

3.1 Diethyl ether; 95 % ethanol (v/v), mixture of equal parts by volume.

Neutralize precisely at the moment of use with the potassium hydroxide solution (3.2), with the addition of 0,3 ml of the phenolphthalein solution (3.3) per 100 ml of mixture.

Note 1: Diethyl ether is highly inflammable and may form explosive peroxides. Special care should be taken in its use.

Note 2: If it is not possible to use diethyl ether, a mixture of solvents containing ethanol and toluene may be used. If necessary, ethanol may be replaced by propanol-2.

3.2 Potassium hydroxide or sodium hydroxide, titrated ethanolic or aqueous solution, c(KOH) [or c(NaOH)] about 0,1 mol/l or, if necessary, c(KOH) [or c(NaOH)] about 0,5 mol/l. Commercial solutions are available.

The exact concentration of potassium hydroxide solution (or sodium hydroxide solution) must be known and checked prior to use. Use a solution prepared at least five days before use and decanted into a brown glass bottle with a rubber stopper. The solution should be colourless or straw coloured.

If phase separation is observed when using aqueous solution of potassium hydroxide (or sodium hydroxide), replace the aqueous solution by an ethanolic solution.

Note 3: A stable colourless solution of potassium hydroxide (or sodium hydroxide) may be prepared as follows. Bring to the boil 1 000 ml of ethanol or water with 8 g of potassium hydroxide (or sodium hydroxide) and 0,5 g of aluminium shavings and continue boiling under reflux for one hour. Distil immediately. Dissolve in the distillate the required quantity of potassium hydroxide (or sodium hydroxide). Leave for several days and decant the clear supernatant liquid from the precipitate of potassium carbonate (or sodium carbonate).

The solution may also be prepared without distillation as follows: to 1 000 ml of ethanol (or water) add 4 ml of aluminium butylate and leave the mixture for several days. Decant the supernatant liquid and dissolve the required quantity of potassium hydroxide (or sodium hydroxide). The solution is ready for use.

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3.3 Phenolphthalein, 10 g/l solution in 95 to 96 % ethanol (v/v) or alkali blue 6B or thymolphthalein, 20 g/l solution in 95 to 96 % ethanol (v/v). In the case of strongly coloured oils, alkali blue or thymolphthalein shall be used.

4. APPARATUS

Usual laboratory equipment including:

4.1 Analytical balance;

4.2 250 ml conical flask;

4.3 10 ml burette class A, graduated in 0,05 ml, or equivalent automatic burette.

5. PROCEDURE

5.1 **Preparation of the test sample**

When the sample is cloudy, it should be filtered.

5.2 **Test portion**

Take a sample depending on the presumed acidity in accordance with the following table:

Expected acidity(oleic acidity g/100 g)	**Mass of sample (g)**	**Weighing accuracy (g)**
0 to 2	10	0,02
> 2 to 7,5	2,5	0,01
> 7,5	0,5	0,001

Weigh the sample in the conical flask (4.2).

5.3 **Determination**

Dissolve the sample (5.2) in 50 to 100 ml of the previously neutralized mixture of diethyl ether and ethanol (3.1).

Titrate while stirring with the 0,1 mol/l solution of potassium hydroxide (or sodium hydroxide) (3.2) (see Note 4) until the indicator changes (the colour of the coloured indicator persists for at least 10 seconds).

Note 4: If the quantity of 0,1 mol/l potassium hydroxide (or sodium hydroxide) solution required exceeds 10 ml, use the 0,5 mol/l solution or change the sample mass according to the expected free acidity and the proposed table.

Note 5: If the solution becomes cloudy during titration, add enough of the solvents (3.1) to give a clear solution.

Carry out a second determination only if the first result is higher than the specified limit for the category of the oil.

6. EXPRESSION OF RESULTS

Acidity as a percentage of oleic acid by weight is equal to:

$$V \times c \times \frac{M}{1000} \times \frac{100}{m} = \frac{V \times c \times M}{10 \times m}$$

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where:

V	=	the volume of titrated potassium hydroxide solution (or sodium hydroxide) used, in millilitres;
c	=	the exact concentration in moles per litre of the titrated solution of potassium hydroxide (or sodium hydroxide) used;
M	=	282 g/mol, the molar mass in grams per mole of oleic acid;
m	=	the mass of the sample, in grams.

Oleic acidity is reported as follows:

(a) to two decimal places for values from 0 up to and including 1;

(b) to one decimal place for values from 1 up to and including 100.

ANNEX II

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

(1) point 3.3 is replaced by the following:

3.3. **Optional terminology for labelling purposes**

Upon request, the panel leader may certify that the oils which have been assessed comply with the definitions and ranges corresponding solely to the following terms according to the intensity and perception of the attributes.

Positive attributes (fruity, bitter and pungent): According to the intensity of perception:

— *Robust*, when the median of the attribute is more than 6;

— *Medium*, when the median of the attribute is between 3 and 6;

— *Delicate*, when the median of the attribute is less than 3.

Fruitiness	Set of olfactory sensations characteristic of the oil which depends on the variety of olive and comes from sound, fresh olives in which neither green nor ripe fruitiness predominates. It is perceived directly and/or through the back of the nose.
Green fruitiness	Set of olfactory sensations characteristic of the oil which is reminiscent of green fruit, depends on the variety of olive and comes from green, sound, fresh olives. It is perceived directly and/or through the back of the nose.
Ripe fruitiness	Set of olfactory sensations characteristic of the oil which is reminiscent of ripe fruit, depends on the variety of olive and comes from sound, fresh olives. It is perceived directly and/or through the back of the nose.
Well balanced	Oil which does not display a lack of balance, by which is meant the olfactory- gustatory and tactile sensation where the median of the bitter attribute and the median of the pungent attribute are not more than 2 points above the median of the fruitiness.
Mild oil	Oil for which the median of the bitter and pungent attributes is 2 or less.