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GUIDE FOR VERIFYING THE CONFORMITY OF A PREVIOUSLY DECLARED COMMERCIAL CATEGORY OF OLIVE OIL AND OLIVE-POMACE OIL

1. Scope of application

In order to verify the compliance of an olive oil to the declared category, a set of guidelines and recommendations must be established. This will certify the compliance of a product either to the legislation in force or to the terms of a contractual relationship. These guidelines can be applied either publicly or privately. They are recommendations for checking compliance with a pre-established order, either in a standard or private contract, to support the application of existing international standards and regulatory procedures.

The verification process must abide by the relevant laws in force. Two legal principles are particularly important: first, the principle of the presumption of innocence, including its alter ego, *in dubio pro reo*. Second, the principle of objectivity: objectivity, neutrality and impartiality must be shown throughout the process, which set the guidelines for dealing with any discrepancies or doubts that may arise at different stages of the verification process.

2. Purpose

The purpose of this protocol is to provide guidelines and suggestions for verifying the compliance of a declared category of olive oil. This applies to the category given on the label of a packaged oil(hereafter referred as "batch", for the purposes of this guide or the category given on a bulk container (hereafter referred as "bulk", for the purposes of this guide) ready to be packaged and sold. The protocol can also be referred to in order to settle a private dispute between contracting parties.

As a general rule, this process must always be guaranteed and objective, as indicated above. They must be clearly defined, detailed and accepted by the parties involved.

There are several steps to verification, which must be completed in a timely manner. They are as follows:

- Sampling;
- Guardianship and care of the samples obtained;
- Delivery of samples and relevant documentation to the laboratory for analysis;
- Receipt and care of samples in the laboratory;
- Analysis of the samples;
- Final categorisation according to the results obtained.

3. Sampling

Sampling is highly important when verifying the category of an olive oil. It is also very delicate; the entire process could be compromised if not done properly. Obtaining objective results depends on using a sample that faithfully represents the olive oil in question.

For the purposes of this document, sampling is defined as:

> "The selection of a set of homogenous samples that are considered representative of a batch of packages or a specific tank of oil, to study or determine their characteristics in order to verify compliance with the requirements specified by the legislation in force or by the terms of a contract."

Sampling must be representative and objective; it must be conducted following the international standards in force. Sampling must always be carried out by qualified personnel using the necessary facilities. Any deviation from protocol, for whatever reason, must be explicitly accepted by all parties. It must be recorded in the corresponding sampling report, which must be included in the verification documentation.

A sample that is not representative, or that is dubiously representative, can compromise the final results. It may even invalidate the entire verification process itself, as indicated above. Accordingly, it is of the utmost importance that those responsible for sampling take the necessary steps to prevent a sample used for verification from being considered unrepresentative.

Samples obtained at the sampling phase – by batch, wholesale, retail or legal fractioning[1] – must be stored in the corresponding immediate containers. The container should be properly filled, leaving as little head space as possible. This prevents breakage should the oil expand. Containers with a volume of oil approximately 90%[2] or less of the packaging and intended for organoleptic assessment must be rejected unless they are in an inert atmosphere.

In order for sampling to be universal and effective, it must apply the internationally accepted standard. The latest version of ISO 5555 "ANIMAL AND VEGETABLE FATS AND OILS - SAMPLING" is recommended, or other similar standards recognised by the legal texts in force.

3.1. Sampling by batch

The sample must be homogenous and representative of the batch from which it was taken.

In retail establishments, samples should be taken in their stores. Containers (immediate packaging) should be taken from the original containers (boxes) where the conditions indicated by the operator are met, as dictated by international standards and national legislation. Samples should be taken from the same batch.

When sampling directly from the shelves of retail outlets or in their stores, the necessary number of containers from the same batch may not be available, or the environmental conditions in which the containers are found may not meet the requirements for correct storage[3],such as regarding light and temperature.

[1] When fractionating samples, operations must be performed under agreed, recognised and approved procedures between parties
[2] "COI/T.15/NC No 3/Rev. 12 TRADE STANDARD APPLYING TO OLIVE OILS AND OLIVE POMACE OILS" – Point 9
[3] COI/BPS/Doc. No 1/ 2018 "Best practice guidelines for the storage of olive oils and olive pomace oils for human consumption"

When taking samples directly from outlets, all relevant information must be recorded in detail in the sampling documentation. This includes information about the environmental and storage conditions and about how the product was presented, both of which can influence the quality of the product or indicate that the oil may have undergone changes.

In order to ensure the samples are representative, standards guidelines should be followed closely.

A second important aspect of the sampling process is the homogeneity of the sampled batch. This can be confirmed by the analysis laboratory. The importance of homogeneity depends on the purpose of the verification process.

This may be important in the private sphere, due to the consequences of encountering two different olive oils.

When requested and agreed upon by parties involved in commercial transactions, the procedures, requirements and decision rules for homogeneity checks involving laboratory analysis are defined in contracts.

A final aspect to bear in mind when sampling by batch is that organoleptic assessment must always have its own analysis model, one which is different from that intended for physico-chemical analysis.

The smallest possible volume container should be used, and it should never be less than 250mL. If the immediate container is of a higher volume, the laboratory may fractionate the samples by drawing up the relevant report and following recognised procedures[4], using coloured containers of no less than 250mL so that, whenever analysis is necessary, one container is used at a time. For counter-analysis, where two independent analyses must be carried out in different sessions, one 250mL container should be used for each of the analyses.

In every case, the fractionating of samples should be motivated, agreed upon and authorised by the involved parties, following agreed or recognised procedures. It should only be applied when absolutely necessary since any manipulation of samples can affect the final results.

3.2. Sampling in bulk

Certain precautions should be taken when sampling from tanks to ensure that samples are truly representative.

In accordance with international sampling standards, samples must be taken from a tank using probes that are weighed down from the top of the tank. This allows sub-samples to be taken from different levels, meaning the tank is adequately represented. However, modern tanks do not usually have a top cover that allows this sort of sampling. Instead, they have a tap on the side to extract oil from below. This system does not always guarantee the homogeneity or representativeness required of the sample, which may invalidate the verification process. This can be avoided if the tank is previously homogenised by injecting an inert gas into the bottom of the tank or another similarly effective method.

This sampling system may generate additional problems if the side tap is not properly purged; samples may be contaminated by old oil left in the tap.

[4]For example ISO 5555:2001, point 6.9 Preparation of laboratory samples

This must be recorded when writing up the sampling documentation. It must also be recorded that any problems that arise are the sole responsibility of the operator who owns the tanks. If this sampling system is accepted by the parties involved, this must also be reflected in the report.

3.3. Anonymity of samples

Sampling data should be kept at the highest possible or required level of anonymity and confidentiality.

Whenever possible or requested, samples must be taken from an anonymous immediate container in order to comply with the principle of confidentiality. Once the samples have been taken, either in batches or in bulk, the immediate packaging should be coded by the person responsible. This should be included in the report so that laboratories that conduct further analysis do not receive additional information about the sample in question. While it is true that the laboratory that will conduct counter-analysis may have information on the type of analysis to be conducted, the operator who requested the analysis will have been the one to provide this information. To avoid this circumstance, it is recommended that the designated body or operator hold all samples, whenever possible, and send the corresponding counter-analysis sample to the operator, following the protocols indicated for this purpose.

4. Guardianship and care of the samples

Samples must be properly stored before being sent to laboratories for analysis. They must be kept under the appropriate light, temperature and contamination conditions so that they do not deteriorate. These conditions should be traceable at all times and agreed upon beforehand with the operators involved. Storage conditions and their traceability should be included in the final documentation of the verification process. Any other conditions and deadlines required by the standards at this stage of the process should also be recorded. Samples should be kept under the conditions defined by the IOC document[5].

5. Delivery of samples and relevant documentation to the laboratory for analysis

There are two clearly defined aspects to consider for this step:

a) The delivery of samples to the laboratory;
b) The accompanying documentation.

With regard to the delivery of samples, all necessary precautions must be taken to protect the immediate containers so as to prevent accidental breakage. Dark, non-glass containers should be used whenever possible. In addition, shipments must be made without delay. The receiving laboratory should certify that this has been done; it should keep the corresponding supporting documents and send this declaration or record as an annex to the analysis certificate.

As for the accompanying documentation, the immediate containers with the test sample should be anonymous, where applicable. Containers should arrive at the laboratory with only a code or a key stating the additional details of the sample. The request for laboratory analysis should be limited to an application document only in the case of first analyses, and a request for duplicate analysis in the case of counter-analysis.

[5]COI/BPS/Doc. No 1/ 2018 "Best practice guidelines for the storage of olive oils and olive pomace oils for human consumption"

6. Receipt and care of samples in the laboratory

The laboratory chosen to conduct the analysis will receive the samples and draw up a report of the entire registration process. The following should be observed:

1. No sample should arrive broken.
2. The code of the immediate packaging must be unaltered and perfectly visible and must correspond to the sample indicated in the analysis request.
3. If the samples arrive in bags, their seal must be unaltered and their coding must correspond to the analysis request.
4. The bag containing the immediate container must be fully intact, with no breakage, tears or tampering.
5. If the analysis request included physico-chemical and organoleptic analyses, there must be additional immediate containers for each.
6. The volume of oil in the container must be approximately higher than or equal to 90% (see above).

If the above requirements are not met, the receiving laboratory shall record this in a report. In case 1, it will notify the sender that it must send a new package immediately, if available. In cases 2, 3 and 4, it will inform the sender and then return the samples, stating the reason for the return in the document. The laboratory will take photographs to show their observations. In case 5, a new request will be made for a new package or an agreement to proceed with both analyses on the same container. In case 6, the sender will be informed of the issue and asked for authorisation to conduct the analysis, which must be recorded in writing.

If no abnormality is found, the laboratory shall store the samples under the standard conditions (see above).

When determining quality, the time from the sample arriving at the laboratory to its final result, including counter-analysis, should not exceed six months for products sampled in bulk and the best before date for batch products. If the laboratory is unable to meet this deadline, it must inform the sender immediately and keep a record, indicating the maximum period for analysis, which may or may not be accepted by the sender. If the new deadline is accepted, it must be included in the documentation, which will be attached to the analysis file. No time limit will be applied when determining purity.

7. Analysis of the samples

As a matter of principle, any analytical method used to verify compliance must be accepted and endorsed by the relevant national or international bodies or, in the case of contractual relations, by the parties involved.

Any process to verify compliance, whatever its purpose, must be imbued with the principles of law that make such a process objective, independent, and without any uncertainty up to a legally acceptable margin in order to rule out arbitrariness.

In the case of analytical determinations, these principles must be observed from the following points of view:

1. Compliance with the requirement of the laboratories performing the analysis;
2. Compliance with the requirements of the analytical method itself.

7.1. Laboratories

Any laboratory involved in checking compliance shall have a quality assurance system for all aspects of management and analysis, guaranteeing the treatment of the sample before it is sent for analysis, the analysis itself, and its subsequent storage.

Laboratories that perform analysis should:

1. Be accredited under the most recent version of ISO/IEC 17025 “General requirements for the competence of testing and calibration laboratories”, with regard to the methods used;
2. Have the method recognised either by an internationally accredited body related to the matrix analysed (the IOC), or by the national authority, provided that such recognition includes the ISO/IEC 17025 accreditation of the laboratory in the analytical methods used in the verification;
3. Be independent and if necessary ensure that there are no conflicts of interest between the parties involved. Conflict of interest is understood to mean the possible affectation of the impartial and objective performance of the laboratory functions due to interests other than the analysis itself;
4. Be willing to be audited at any time by the specialised personnel of the international body or by the national authority that grants accreditation;
5. If requested, allow a legal representative or a technical expert designated by the operator or operators to be present when performing the counter-analysis, ensuring that they do not interfere with the process or compromise the process itself or its results.

7.2. Requirements of the analytical methods

Any analytical method, the results of which may lead to prejudice beyond that which is internationally accepted, must contain guarantees that prevent insecurity or, in extreme cases, arbitrariness. It must therefore be validated analytically.

From a formal point of view, the necessary security elements are found in the accreditation requirements according to ISO 17025, which validate the technical competence of the method and of those performing the analysis.

8. Storage of the sample

Unless agreed otherwise, samples should be kept away from light, heat and odours and properly sealed for no less than six months in case any claim is made. Storage conditions must always be traceable.

9. Certification of analysis

The laboratory shall send the corresponding certification, in accordance with its accredited working protocols.

If the results show that the product does not comply, the complementary information generated in the laboratory should be sent with the analytical certification. This shall include the following:

- Certificate of receipt of sample, which must include:

  - Registration number;
  - Number of samples;
  - Description of the state in which they arrived;
  - Codes and seals of the bags;
  - Any other incident worthy of mention.

- Place of storage prior to the analysis and document accrediting the conditions thereof.

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