**SPECIAL REPORT** 01/2026 **EN**

# Control systems for olive oil in the EU

## A comprehensive framework, but unevenly applied

CURIA RATIONUM
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COURT
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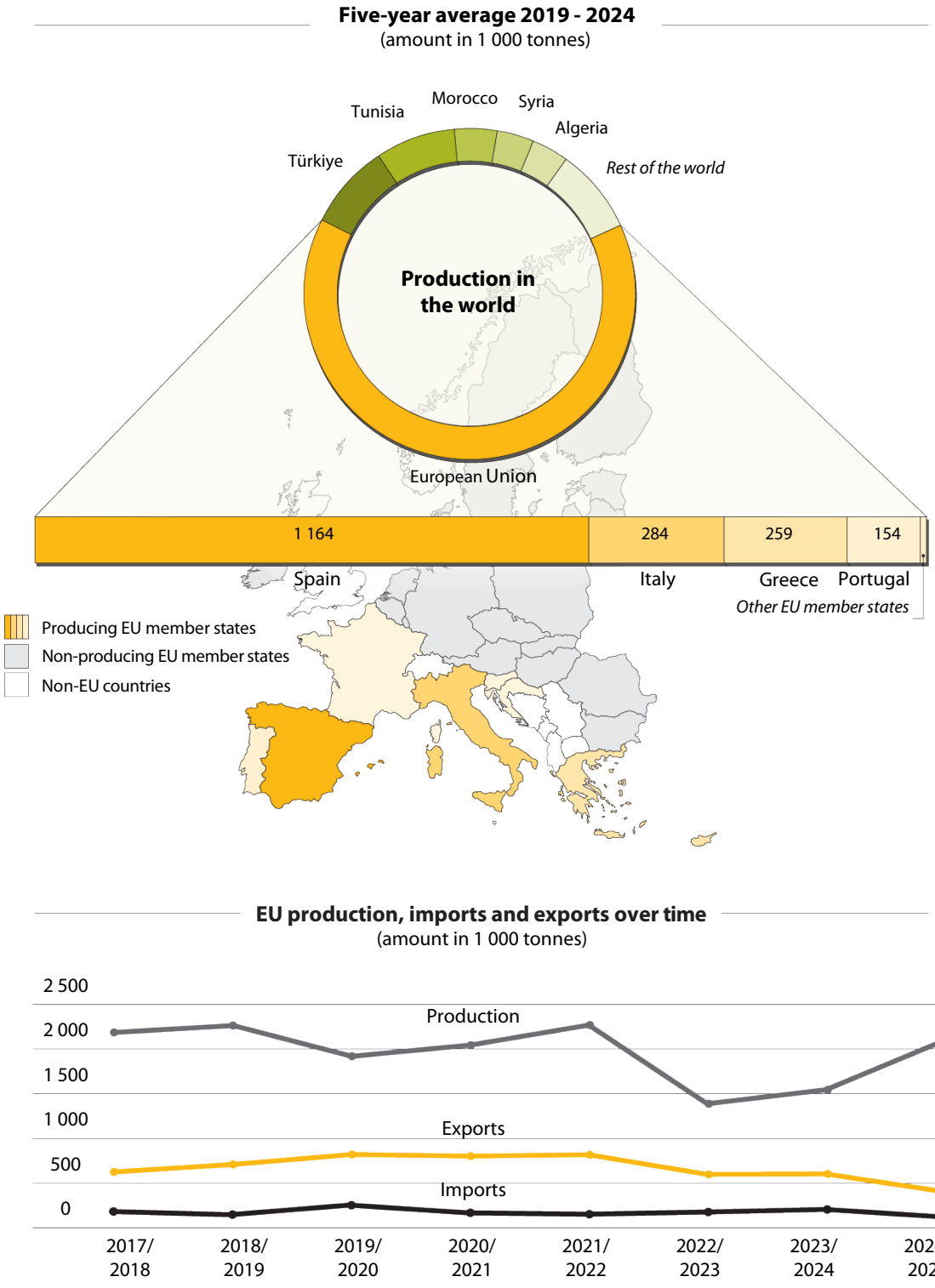
# 01 Main messages

## Why this area is important

**01** Olive oil is a flagship product for the European Union (EU), which is the world's leading olive oil producer, consumer, and exporter. ***Figure 1*** provides some details on the EU's olive oil production and trade. The EU's reputation for its high-quality and genuine olive oil is key not only economically, but also from the cultural and public health perspectives. Many EU citizens incorporate olive oil into their daily diet, so it is essential that they can trust the quality and authenticity of the products they purchase. This is especially important when it comes to extra virgin olive oil, which is marketed at a higher price than other oils, and must therefore meet high standards to justify its price to consumers.

## Figure 1 | Olive oil in the EU




*Source:* ECA, based on data from the European Commission and World Population Review.

**02** The EU has put in place a system of controls to ensure that the olive oil that consumers can buy in the EU is genuine (i.e. it does not contain other oils, and its quality and purity correspond to the category on the label), that it does not endanger consumers' health

(more specifically, that it does not contain contaminants), and that its origin (as mentioned on the label) can be verified (see ***Figure 2***).

**Figure 2 | EU control systems for olive oil**


*Source:* ECA.

**03** The European Commission ("the Commission") is responsible for laying down the regulatory framework, and member states are responsible for ensuring that olive oil meets both food safety requirements and the EU requirements for putting olive oil on the market (also called "marketing standards" – see ***Annex I***, paragraph ***05***). It is the responsibility of member states to set up a national control system and perform risk-based checks. Member states must also have a sanctioning system for non-compliance with olive oil marketing standards and food safety requirements. The sanctioning system must be effective, proportionate and dissuasive.

**04** We carried out this audit given the importance of the olive oil sector for the EU (see paragraph ***01***). With this audit we expect to help improve the control framework for marketing standards and food safety requirements related to olive oil, as well as its implementation by member states.

**05** The objective of this audit was to assess whether the EU's control systems are designed to ensure that olive oil sold in the EU is genuine, safe, and traceable. We assessed the design of the control framework as required by EU legislation, as well as its implementation in four member states since 2018: Belgium, Greece, Spain and Italy. More precisely, we assessed whether these four member states carry out the required conformity checks

(checks to confirm that olive oil complies with the standards of its category and corresponding characteristics), checks for the presence of contaminants, and traceability checks to confirm the origin of the oil. For further background and details on the audit's scope and methodology, see ***Annex I***, paragraphs ***09*** to ***11***.

## What we found and recommend

**06** We found that there is a comprehensive EU legal framework for conformity checks on olive oil, but member states do not fully apply it. Nevertheless, conformity checks identified cases of non-compliance. We also found that member states find very few cases of contaminant levels in olive oil over the legal limits. However, there are some flaws in the control systems, mainly regarding contaminants other than pesticides. Our audit also showed that traceability checks do not always enable the identification of a product's origin.

**07** Olive oil is highly regulated, and there is a **comprehensive set of EU rules** defining how member states should check whether an olive oil belongs to its declared category. This involves physico-chemical analysis in a laboratory and organoleptic assessment by a tasting panel. Member states should carry out a minimum number of checks per year and plan their checks based on a risk analysis. They should report the results of their checks to the Commission and have a system of sanctions and penalties that is effective, proportionate, and dissuasive (paragraphs ***20***-***24***).

**08** However, **EU rules are not always complied with**. Some of the member states we visited do not carry out the minimum number of checks, or they carry out incomplete laboratory analyses or exclude parts of the market from their risk analyses. Nevertheless, the member states we visited complement the conformity checks required by the EU with other types of checks. When non-compliance cases are found, sanctions and penalties are not always effective or dissuasive (paragraphs ***27***-***40***).

**09** The **Commission only has a partial view** of how the control systems function in the member states. The annual reports and meetings with member state authorities do not ensure the exchange of all relevant information (paragraphs ***47***-***49***).

### Recommendation 1

**Strengthen the Commission's oversight of member states' control systems for olive oil**

The Commission should strengthen its oversight of member states' control systems by:

(a) prompting the member states to provide appropriate information about their risk analyses, the checks carried out (both conformity checks and other inspections), and the sanctions and penalties they apply;

(b) assessing member states' control systems, including whether conformity checks comply with EU requirements;

(c) taking appropriate and proportional action when the control systems are considered to be insufficient.

**Target implementation date: (a) and (b) 2027, and (c) 2028**

**10** The **legal requirements for olive oil are not sufficiently clear** on important areas, such as the conditions for blending oils from different harvest years, or whether blending extra virgin and virgin olive oils to sell as extra virgin is allowed. We found that member states have different approaches, and these choices may influence the degradation of olive oil over time (paragraphs *25*-*26*).

### Recommendation 2

**Clarify the rules for blending different virgin olive oils**

The Commission should clarify the rules on blending virgin olive oils from different harvest years or different categories.

**Target implementation date: 2026**

**11** The **results of the conformity checks** show that most non-compliance cases found by member states are detected through organoleptic assessment and are linked to the degradation of oil over time. Overly long "best before" dates and certain production practices may contribute to this situation (paragraphs *41*-*46*).

**12** Regarding food safety, olive oil is checked for different types of contaminants. There is a clear EU legal framework for checking for **pesticides** in olive oil, with a minimum number of samples to be analysed every three years. Member states carry out checks based on risk analyses and only find a few cases of non-compliance (paragraphs *52*-*57*).

**13** For **contaminants other than pesticides**, there are fewer requirements. The EU has defined maximum residue levels (that apply to vegetable oils and fats) for some contaminants, but not for others. Moreover, there is no minimum number of checks required at EU level. Member states decide for which contaminants to check. The member states we visited do not always document their risk analyses or justify their choices. Since 2023, the Commission has assessed member states' control plans for food of non-animal origin (including olive oil) (paragraphs *58*-*64*).

**14** Although the EU **imports** the equivalent of around 9 % of its annual olive oil production, checks for pesticides and other contaminants in olive oil imported from non-EU countries are either non-existent or very limited in the member states visited (paragraphs *65*-*66*).

### Recommendation 3

**Improve guidance on checks for contaminants in olive oil**

The Commission should:

(a) instruct the member states to provide details about their risk analyses, which contaminants in olive oil they are checking, and the frequency of such checks;

(b) require the member states to consider imported olive oil in their risk analyses explicitly.

**Target implementation date: 2026**

**15** Basic **traceability** ("one step back, one step forward") is a general requirement for all types of food placed on the EU market. In addition, under the marketing standards for extra virgin and virgin olive oil, the geographical area where the olives were harvested and the mill is located should be identifiable. However, there are **no comprehensive EU rules or guidance** on how and when traceability aspects should be checked (paragraphs *69*-*74*).

### Recommendation 4

**Clarify and provide guidance on traceability check requirements**

The Commission should clarify and provide guidance on:

(a) what traceability checks should cover;

(b) how the results of traceability checks should be reported.

**Target implementation date: 2027**

**16** Member states generally **check traceability** aspects both during food safety checks and during conformity checks, but **to different extents**. Member states such as Spain and Italy verify the origin at all stages of the supply chain. They have electronic registers to record every movement of olives or olive oil. The aim of these registers is to increase transparency and reduce the risk of fraud (paragraphs *75*-*80*).

**17** For a **sample of 24 extra virgin or virgin olive oils**, we checked whether we could confirm the origin on the label. We found that this was not possible for four olive oils that either originated from more than one member state, or were of mixed EU and non-EU origin. The exercise also showed how difficult it is to trace olive oil beyond national borders because cooperation between member states is not always effective (paragraphs *81*-*84*).

### Recommendation 5

**Improve the traceability of olive oil**

The Commission should:

(a) encourage and support member states in developing registers to record the movements of olives and olive oil;

(b) encourage and support member states in improving the compatibility of the different traceability systems to facilitate the cross-border traceability of olives and olive oil.

**Target implementation date: 2028**

02

# A closer look at our observations

## Member states do not fully apply the legal framework for conformity checks on olive oil

**18** Olive oil is highly regulated. It is subject to specific EU legislation[1] defining the different categories of olive oil and their characteristics and imposing precise requirements for putting olive oil on the market. The aim of these rules is to guarantee product quality and to combat fraud. In addition, their aim is also to facilitate trade and to ensure a level playing field for EU producers. Member states are responsible for setting up a national control system and for carrying out checks to confirm that olive oil complies with these requirements (further referred to as "conformity checks").

**19** We assessed whether:

- there is a clear legal framework for checking that olive oil complies with its marketing standards;
- member states set up and apply:
    - a control system to carry out the minimum number of conformity checks on olive oil taking risk analysis into account;

[1] Regulation (EU) No 1308/2013 establishing a common organisation of the markets in agricultural products; Regulation (EU) 2022/2104 on marketing standards for olive oil; Regulation (EU) 2022/2105 laying down rules on conformity checks on marketing standards for olive oil and methods of analysis of the characteristics of olive oil.

- a system of effective, proportionate and dissuasive sanctions and penalties for non-compliance regarding the conformity of olive oil;

- conformity checks are effective in identifying cases of non-compliance and their underlying causes;

- the Commission supervises member states' control systems for conformity checks and provides support to the member states.

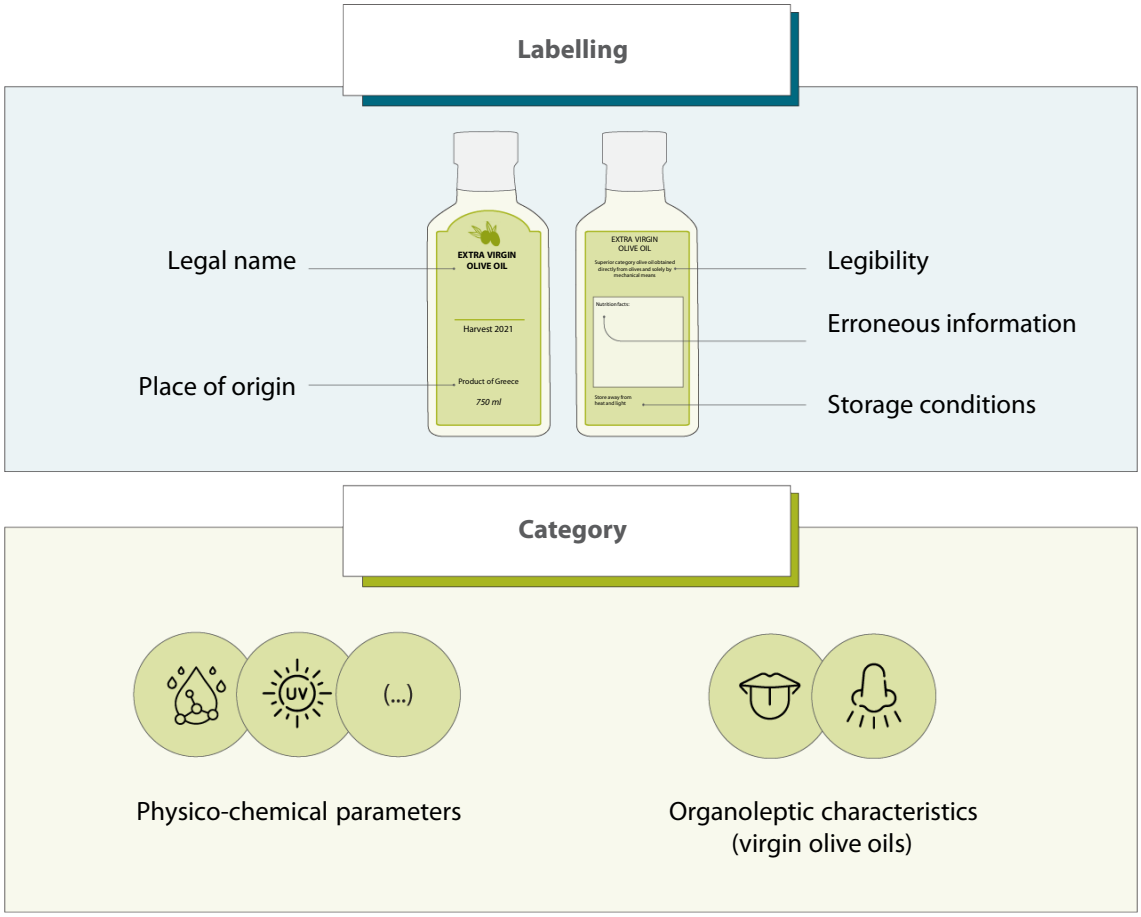
## There is a comprehensive legal framework for conformity checks on olive oil

**20** EU rules require that member states carry out a **minimum number of conformity checks** that is proportionate to the volume of olive oil marketed in their country[2]. Member states should carry out one check per 1 000 tonnes of olive oil. The Commission calculates these figures every year based on official trade (intra- and extra-EU) and olive oil and olive-pomace oil consumption data provided by the member states, based on the average of the past five years.

**21** Conformity checks on olive oil must be carried out according to well-defined rules. A conformity check involves checking that (i) the labelling is compliant with the legal requirements and that (ii) the category of the oil matches the declared category. A labelling check is complete after checking five specific elements (see ***Figure 3***).

[2] Article 3(2) of Regulation (EU) 2022/2105.

## Figure 3 | Elements to be checked during a conformity check




*Source:* ECA based on Regulation (EU) 2022/2105.

**22** The rules require that the category be checked through the **physico-chemical analysis** of the olive oil in a recognised laboratory and **organoleptic assessment** by a recognised panel of tasters (see ***Figure 3*** and ***Box 1***). For extra virgin olive oil, there are 15 parameters to be tested (see ***Annex II***). The legislation allows member states to check compliance with these parameters either in any order (all should still be tested) or by following the order defined in the Regulation (EU) 2022/2105 until one of the tests shows that the oil does not match the declared category. A category check is considered complete when all characteristics have been tested or when it is found that the oil does not possess one of the expected characteristics.

**Box 1**

## Organoleptic assessment and tasting panels

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The organoleptic assessment has been part of the marketing standards for virgin olive oils since 1991. It is fully regulated through protocols and standards that define the tasting panel composition (including training and certification of panel members), sample preparation (e.g. standardised coloured glasses and a temperature of 28 °C) and assessment criteria (scoring of positive attributes (such as fruitiness, bitterness, and pungency) and negative attributes (such as rancidity, fustiness, and mustiness)).

Olive oil is currently the only foodstuff in the EU for which organoleptic assessment is explicitly required and set out in the legislation.

**23** Member states should plan their conformity checks on the basis of a **risk analysis**[3]. They may consider a range of different factors, such as product features (e.g. category, period of production, packing operations, storage, country of origin/destination, means of transport), the findings of previous checks, consumer complaints, or the characteristics of the operators. Each member state can decide which factors to take into account and at what stage of the production and distribution chain the controls should take place.

**24** Member states are required to submit an **annual report** to the Commission detailing the results of the conformity checks carried out the previous year, using the reporting template provided by the Commission. They are also required to have an effective, proportionate and dissuasive **sanction and penalty system**, applicable whenever non-compliance with the marketing standards is found. The EU legislation does not define which factors have to be taken into account when assessing the seriousness of the non-compliance, or determining the severity of the penalties.

**25** Regulation (EU) 2022/2104 explicitly leaves several **standard-setting decisions to member states' discretion**. These include: setting rules on blending olive oil with other vegetable oils; establishing labelling requirements regarding the indication of the harvest year

[3] Article 3 of Regulation (EU) 2022/2105.

(see ***Box 2***); and allowing packaging sizes that exceed the limits set by the Regulation for mass catering establishments. In addition, member states can also set specific national requirements (e.g. on traceability), going beyond what is required by the EU.

**Box 2**

### Mandatory indication of the harvest year in Italy

In Italy, it is common practice for bottling facilities to set the "best before" date to a date 12 to 18 months after bottling, rather than after crushing, which may be misleading for consumers. To remedy this, in 2016, Italy introduced the requirement to indicate the harvest year on the label when 100 % of the oil comes from the same harvest (for extra virgin and virgin olive oil of Italian origin and sold in Italy).

**26** In the EU, the legal requirements for olive oil are comprehensive and include mandatory organoleptic assessments. Nevertheless, we identified elements that may influence the degradation of olive oil over time and to which the member states have different approaches (see ***Box 3***). These are:

- blending oils from different harvest years – EU rules do not prohibit blending oils from different harvest years, and operators can decide on the "best before" date;
- lack of clarification or guidance from the Commission on whether blending extra virgin and virgin olive oils to sell as extra virgin is allowed – the current legal framework is not sufficiently clear, as member states have sometimes interpreted EU rules differently.

**Box 3**

### Different approaches in member states

In Greece, operators are allowed to blend olive oil from two different harvest seasons and use the date of the most recent season as the "best before" date. There is no guidance for inspectors on how to check the way operators set the "best before" date.

According to the Italian authorities, marketing a blend of extra virgin and virgin olive oil as extra virgin olive oil is allowed. This was confirmed by a 2023 ruling from the court of first instance of Perugia, in the absence of an official ban on blending categories.

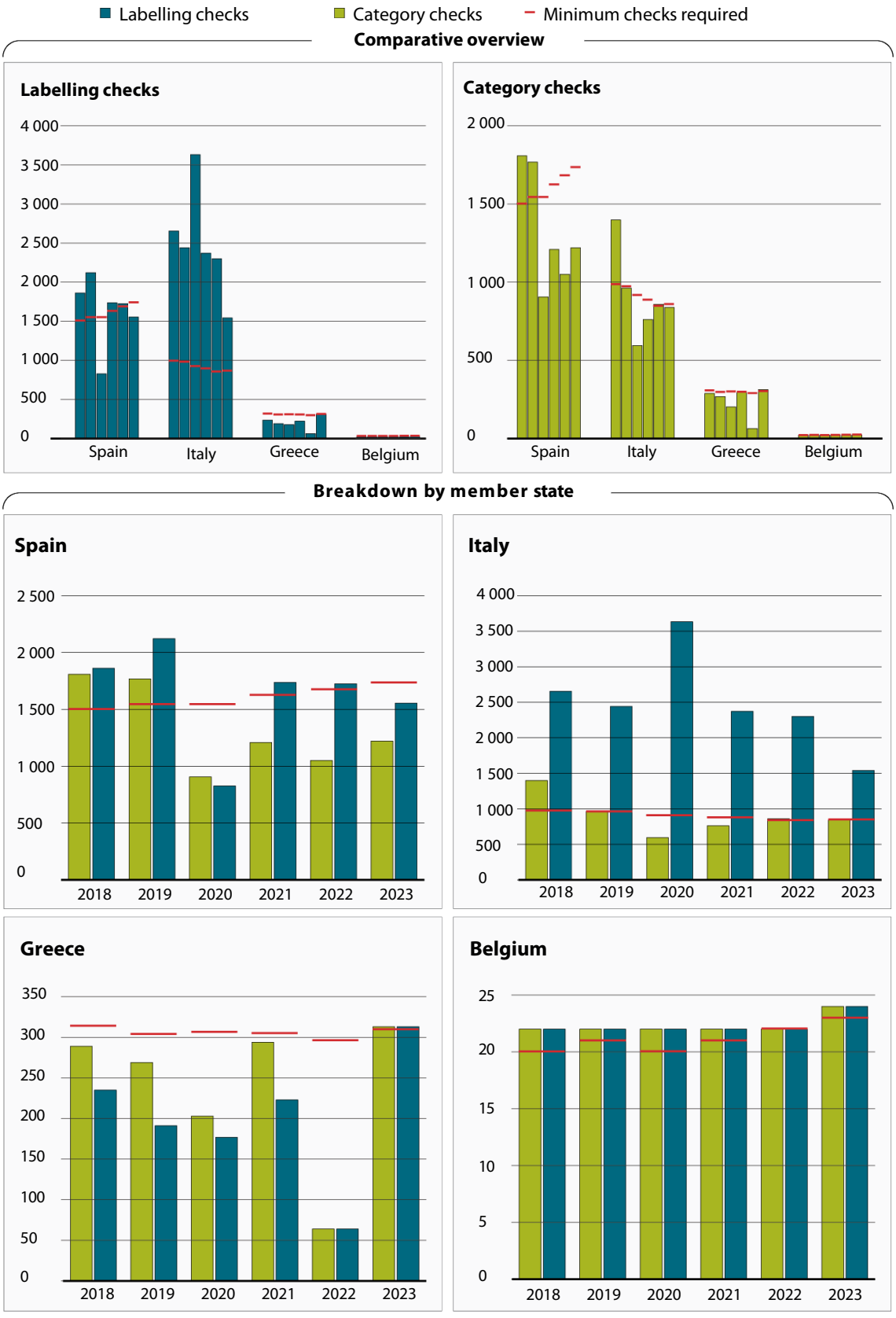
## Member states do not always comply with all the requirements

### Minimum number of conformity checks not reached, but member states carry out other checks as well

**27** Member states must carry out a minimum number of checks on olive oil per year (see paragraph ***20***). We examined the annual reports that the member states we visited sent to the Commission, to assess whether they met this requirement.

**28** We found that member states do not always carry out the required minimum number of checks (see ***Figure 4***). The Italian authorities reached the minimum number of category checks (except in 2020 and 2021, during the COVID-19 pandemic) and carried out many more labelling checks than required. Since 2020, the Spanish authorities have carried out far fewer category checks than required, and the Greek authorities have systematically carried out fewer checks than required (except in 2023). Belgium carried out the required number of checks.

## Figure 4 | Conformity checks carried out in the 2018-2023 period




*Source:* ECA, based on data reported by the member states to the Commission.

**29** Member state authorities informed us that they had problems carrying out the required number of checks in 2020 and 2021 (COVID-19). They also struggled to organise tasting panels. Furthermore, the Spanish authorities argued that the minimum number of checks should be reduced due to bad harvests in 2022/23 and 2023/24 and that a major share of national production could be sufficiently covered by only inspecting a few large operators. The Greek authorities reported ongoing shortages in staff and funding, along with procedural challenges in procuring laboratory services.

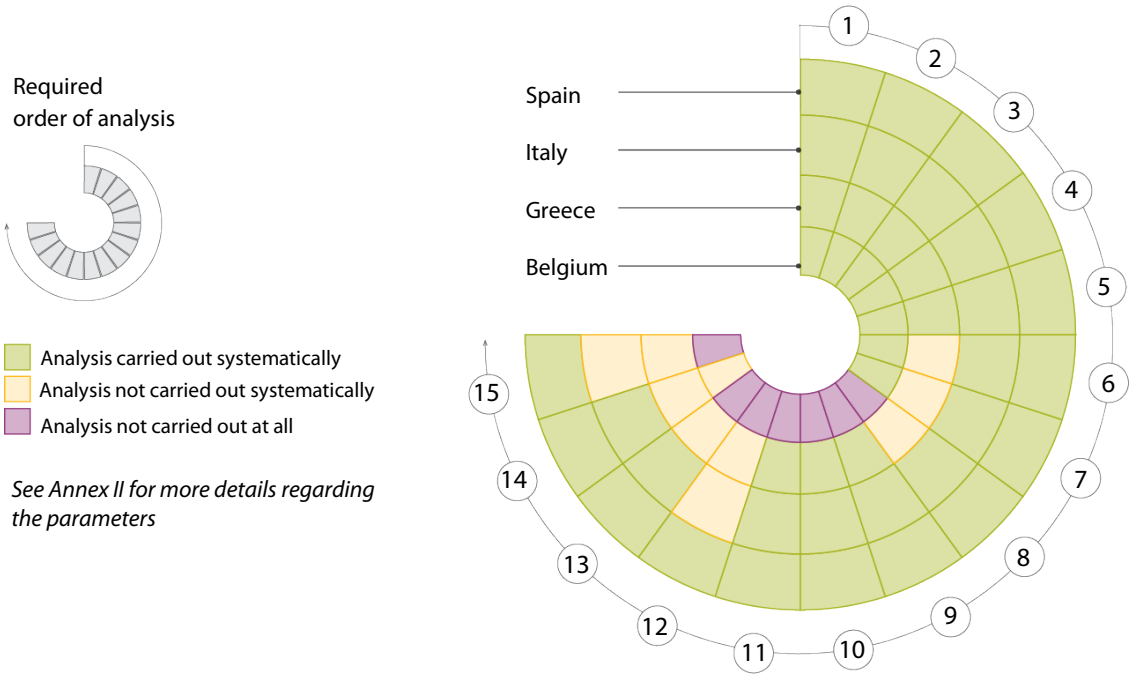
**30** Even though they do not always comply with the EU legislation's requirement regarding the minimum number of checks, it is important to note that the member states we visited carry out other types of checks that complement the conformity checks required by the EU. For example, the Spanish authorities carry out special control campaigns and check labelling and chemical parameters on many consignments for export. The Italian police forces carry out many on-the-spot inspections and specific checks. The Greek authorities check small and medium-size retailers and catering operators to detect fraud.

### Laboratory analyses are not always complete

**31** For a conformity check to be considered complete, 15 parameters must be analysed. We checked which analyses are carried out in the member states we visited. As none of the member states opted to carry out the analyses following the order defined in the Regulation (EU) 2022/2105 (see paragraph ***22***), they should have systematically analysed all 15 parameters.

**32** We found that only the Spanish authorities had analysed all parameters, even though all the member states we visited had reported to the Commission that they had carried out complete category checks (see ***Figure 4***). The authorities of the other three member states we visited had carried out incomplete checks, because they had not covered all compulsory parameters (see ***Figure 5***).

## Figure 5 | The extent to which the member states we visited carried out laboratory analyses for the 15 parameters




*Source:* ECA, based on protocols/contracts with laboratories, laboratory analysis results and guidelines from the member state authorities.

**33** Incomplete laboratory analyses may lead to fraud and certain non-compliant products going undetected. For example, high values of certain parameters could indicate the presence of olive-pomace oil, extraneous oils, or oil that has been chemically processed (see ***Annex II***).

### Two of the member states we visited exclude parts of the market from the checks without a risk analysis

**34** Member states have to follow the requirements set out in the EU legislation regarding the number of checks on olive oil, but there is no obligation to distribute the controls throughout the different stages of the production and distribution chain (see paragraph ***23***).

**35** The four member states we visited carry out a risk analysis when planning their conformity checks, but to different extents. While the Spanish and Italian authorities have fully developed risk analyses that take into account relevant criteria (see ***Box 4***), the risk analyses in Greece and Belgium are rather general and omit potentially relevant criteria (such as the volume and value of the different olive oils marketed).

**Box 4**

### Examples of how Italy carries out risk-based checks

In 2021, the Italian authorities created a focus group on the olive oil sector, supported by the Italian institute for agri-food market services, where they discuss risk factors and critical issues on a yearly basis, taking into account the latest economic situation of the sector.

In addition to the dedicated control body for the agri-food sector and the customs agency, three law enforcement bodies with investigative powers (*Carabinieri*, *Guardia di Finanza* and *Corpo delle Capitanerie di Porto*) carry out checks on olive oil.

In Italy, many inspectors receive training on organoleptic assessment and are members of official tasting panels. This allows them to better target (riskier) olive oils when sampling during inspections.

**36** Moreover, two of the member states we visited exclude certain parts of the production and distribution chain from their conformity checks without having considered them in the risk analysis. For example, the Belgian authorities do not carry out checks on online sales, or at the importers' premises on olive oil imported from non-EU countries. They do not carry out inspections to check that marketing standards are being complied with at the bottling stage either. The Greek authorities only carry out conformity checks on olive oil produced in Greece and destined for the Greek market, thus excluding imported and exported olive oil from their checks.

**37** Italian and Spanish authorities carry out checks throughout the supply chain (industry, retail, and imports and exports), including online sales, and covering olive oils with different origins. In Italy, the authorities prioritise the prevention of food fraud on e-commerce platforms.

## The sanction and penalty systems are not always effective and dissuasive

**38** Member states must apply effective, proportionate and dissuasive penalties when marketing standards are not upheld[4]. In cases of fraud, sanctions should reflect the economic advantage for the operator or a percentage of their turnover[5]. Each member state can decide which factors to take into account when assessing the seriousness of the non-compliance and determining the severity of the penalties (see paragraph ***24***).

[4] Article 13 of Regulation (EU) 2022/2105.

[5] Article 139 of Regulation (EU) 2017/625.

**39** In the four member states we visited, the sanction systems incorporate elements of proportionality: fines depend on the type of infringement, the size of the company and whether it is a repeated infringement.

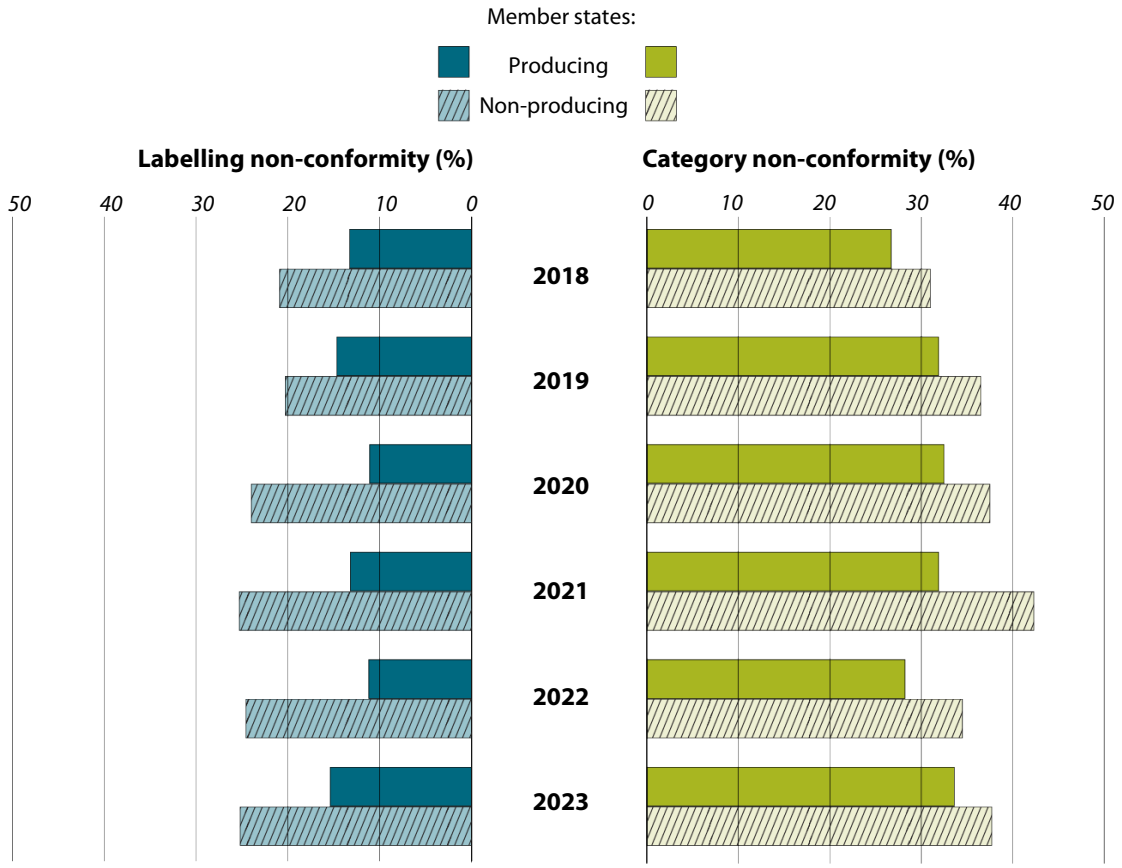
**40** However, based on our analysis of a limited number of non-compliance cases, we found weaknesses regarding the dissuasiveness and effectiveness of sanctions.

- Dissuasiveness: in Greece, fines do not take into account the financial gain from selling a lower-category olive oil at the price of extra virgin olive oil. In Italy and Spain (Andalusia), we identified a good practice – sanctions depend on the product quantities concerned, and on the profits obtained from the illicit activity.
- Effectiveness: in Italy, sanctions are decided relatively quickly, within 1.2 months. However, in Belgium, Spain and Greece, procedures take more time (four months, five months, and 14 months, respectively). This delays the prompt withdrawal of the products from the market.

## Most non-compliance cases found by member states are discovered through organoleptic assessment and linked to degradation

**41** Risk-based conformity checks by member states lead to the detection of numerous non-compliance cases in the olive oils they sample. ***Figure 6*** presents the share of checks in the EU detecting the non-conformity of a label or category. In the 2018-2023 period, 14 % of checks detected the non-conformity of a label, and 32 % the non-conformity of a category. Based on the Commission's yearly presentations on the results of conformity checks in the Working Group of conformity check authorities of the Expert Group for Agricultural Markets – subgroup Arable Crops and Olive Oil (further referred to as the "Olive Oil Working Group"), non-producing member states systematically report higher shares of non-conformity of samples, as regards both labelling and category.

**Figure 6 | Share of checks detecting non-conformity regarding labelling or category (%)**




*Source:* ECA, based on data from the Commission.

**42** In the entire EU, the results of 93 % of physico-chemical analyses demonstrate compliance with the requirements, against only 68 % of organoleptic assessments. An organoleptic assessment has the same legal value as a physico-chemical analysis, but it remains subjective due to the inherent complexity of sensory perception. A system of counter-assessments has been set up to resolve controversial cases. An operator can thus request two additional assessments carried out by other tasting panels.

**43** Further analysis of the reasons behind non-conformity cases regarding category revealed that around one third of the cases could be clearly attributed to oil degradation. This could be deduced from the physico-chemical analysis and the organoleptic assessment. For the rest of the non-compliance cases, it was not possible to identify a specific cause.

**44** High non-compliance rates are also due to member states targeting riskier products in their checks (see paragraph ***35***), as there is a higher chance of finding cases of non-conformity. As a consequence, the results of the conformity checks are not representative of the

overall quality of olive oil in the EU market and do not reflect the overall share of non-conformity of the olive oil produced and marketed in the EU[6].

**45** During this audit, we carried out a case study. In the member states we visited, we purchased 28 different olive oils in retail outlets and had them tested – by a laboratory and tasting panels – to determine their characteristics (see ***Annex III***). Our product selection was not based on a risk analysis. ***Box 5*** presents the results, which illustrate typical conformity check findings.

**Box 5**

## Case study results

Most of the purchased oils complied with the EU requirements for the category on the label, two did not.

- The analysis of one extra virgin olive oil revealed a value which was too high for one parameter. According to the laboratory's interpretation, this value, in combination with the results of the organoleptic assessment (borderline between extra virgin and virgin), indicated that the oil had oxidised, potentially due to improper storage conditions, and should be considered virgin lampante olive oil. This is an example of olive oil degradation over time, likely due to exposure to light or heat during transport or storage.

- For another extra virgin olive oil, the total level of sterols was under the limit. This might happen to certain extra virgin olive oils made from a single variety of olives (Koroneiki, Nocellara del Belice). The International Olive Council has acknowledged this issue and has proposed adjusting the total sterol limit pending further scientific studies. This case shows how difficult it can be to define simple chemical parameter thresholds applicable to olive oils of different olive varieties and geographical origins.

**46** The results of member states' checks and our case study show that olive oil degradation over time is a common problem. Even though storage instructions are indicated on the label, many operators along the distribution chain, as well as consumers, might be unaware of the sensitivity of olive oil to heat and light. Moreover, when an oil is already close to the threshold of its category at the time of bottling and is assigned an overly long "best before" date, the likelihood of its quality deteriorating before it is consumed increases.

[6] European Commission, "Olive oil quality checks in the European Union – 2024 results".

## The Commission only has a partial view of member states' control systems

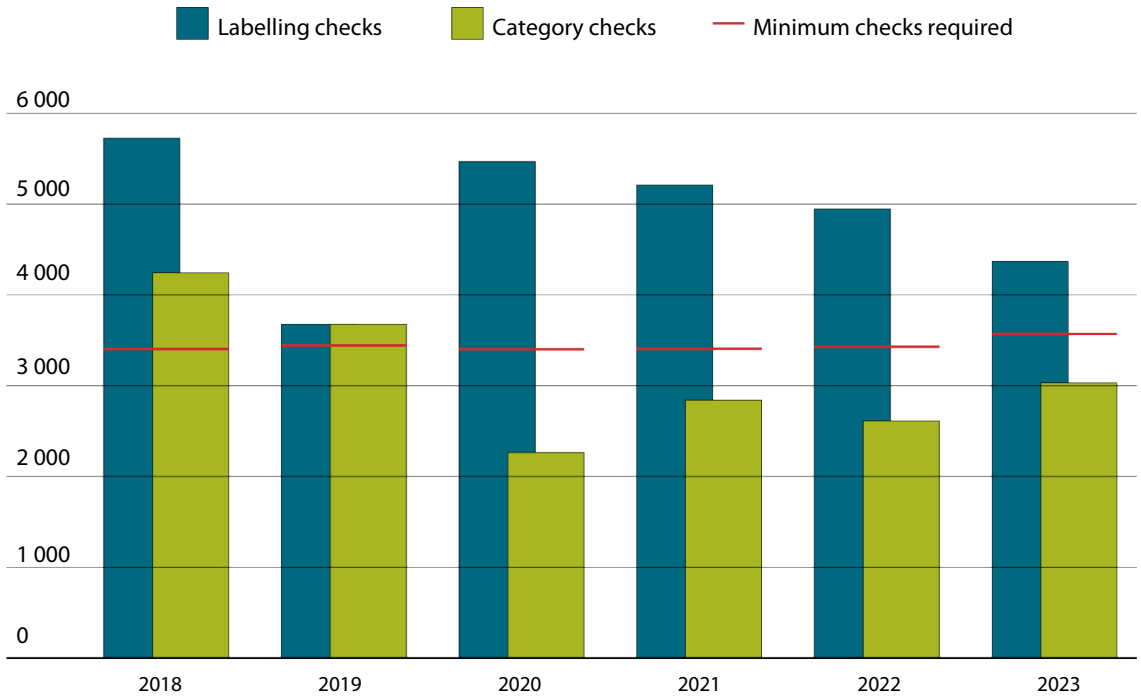
**47** The Commission establishes the regulatory framework for the marketing standards. It monitors its application and the implementation of the conformity checks by member states. The Commission has several means of staying informed about what happens in the member states:

- member states must report the results of their conformity checks annually, using the reporting template provided by the Commission;
- the Olive Oil Working Group, a consultative body comprising representatives from EU member state authorities, holds yearly meetings about their experience with the control system;
- in 2018, a group of consultants carried out a study on the implementation of conformity checks in the olive oil sector throughout the EU for the Commission.

**48** We found that the Commission only has a partial overview of the functioning of the control systems in member states. For example, the Commission was not aware that laboratory tests are incomplete in certain member states or that certain member states exclude parts of the market from their conformity checks. The Commission is only partly aware of how the sanction systems in the member states work and how sanctions are applied in practice: member states' annual reports are often incomplete and the yearly meetings only provide ad hoc information on a few member states.

**49** The annual reports and meetings do not provide a full picture of the control systems in member states. Member states are not required to communicate to the Commission their risk analyses, control plans, parameters analysed in the laboratory or the results of partial or additional checks performed. However, the Commission is aware that, between 2018 and 2023, the minimum threshold of complete category checks was only reached in 2018 and 2019 (see ***Figure 7***). This was discussed bilaterally with the member states.

**Figure 7 | Conformity checks carried out at EU level (2018-2023)**




*Source:* ECA, based on information from the Commission.

# EU control systems for olive oil contaminants have some flaws

**50** Olive oil, as a food product, is subject to the EU's food safety rules. These concern, among other things, hygiene requirements and maximum acceptable levels of contaminants in food. Both olive oil produced in and olive oil imported into the EU are governed by these rules. The EU framework requires member states to ensure that these rules are followed by carrying out checks on operators and food.

**51** We assessed whether the EU legal framework for checking pesticides and other contaminants in olive oil is clear and whether the member states' control systems work well and include imported olive oil.

## EU control systems for pesticide residues in olive oil work well

### The EU has a clear legal framework for pesticide residues

**52** The traces that contaminants leave in olives or olive oil are called "residues". The EU has defined maximum residue levels (MRLs) for pesticides in food. These are the maximum legal thresholds.

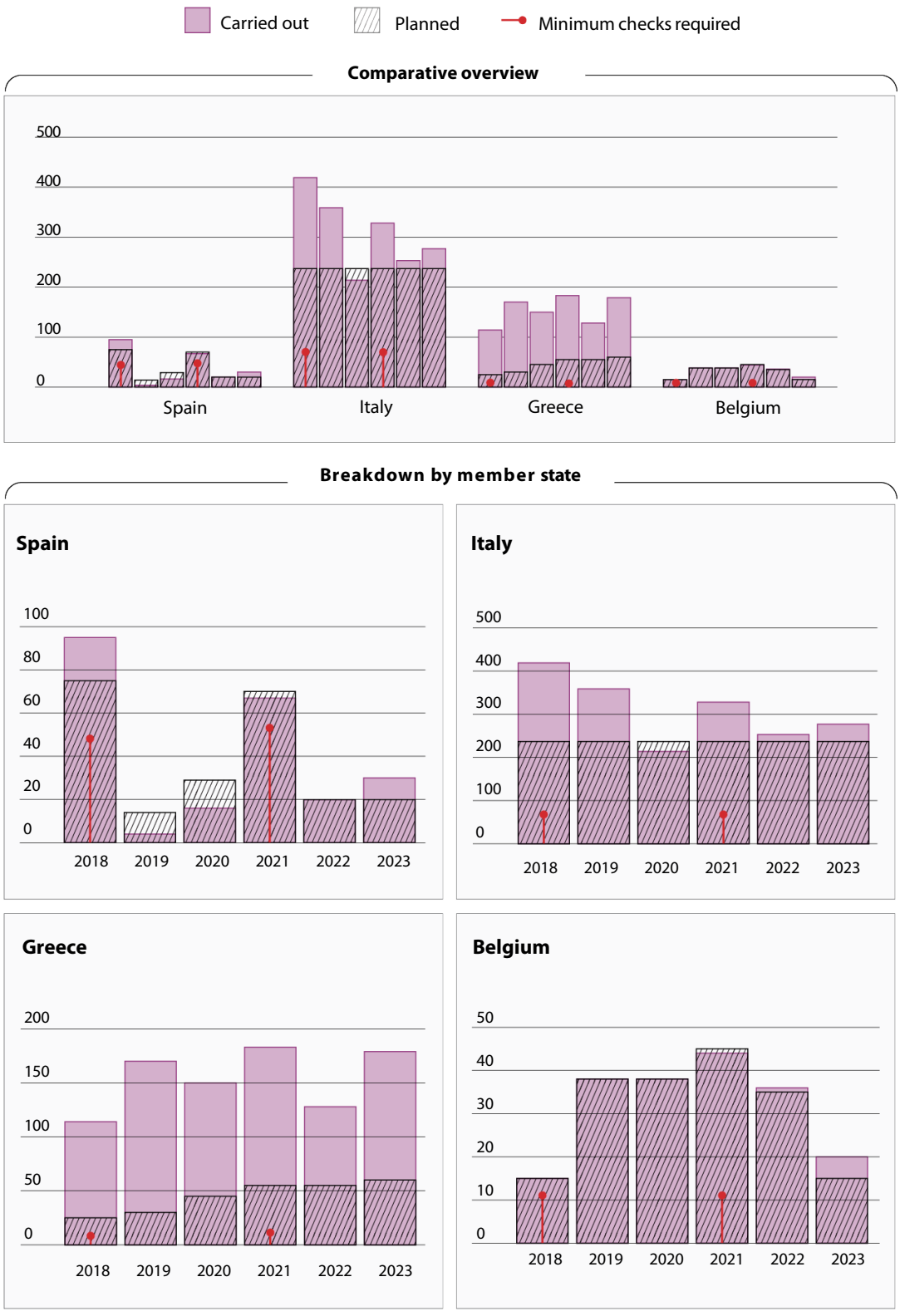
**53** The EU has also set up an EU-coordinated multiannual control programme on pesticide residues in food. Its aim is to ensure compliance with pesticide MRLs and to assess consumers' exposure to pesticide residues. The programme includes olive oil every three years, with the most recent years being 2018, 2021 and 2024. In those years, every member state had to analyse a minimum number of olive oil samples to check whether pesticide residues were present.

**54** In addition, member states have the obligation to establish multiannual national control programmes for pesticide residues. The control programmes should be risk-based and aimed at assessing consumer exposure and compliance with pesticide MRLs. Member states should specify what products to sample, the number of samples to be taken, which pesticides to analyse, and the criteria used to draw up the programme.

## Checks are risk-based and rarely find high pesticide concentrations in olive oil

**55** The member states we visited have control programmes for pesticides through which a number of olive oil samples are analysed for pesticide residues every year. On top of what is required by the EU-coordinated multiannual control programme, they plan the analysis of additional samples (see ***Figure 8***). Three of the member states carry out risk analyses to determine the annual number of samples and their distribution across regions and operators. These member states include olive oil in the risk analyses for broader food categories (i.e. "Vegetable oils" in Belgium, "Fats and oils and other emulsions" in Greece and Spain) and do not have a specific risk assessment for olive oil. Italy does not perform a risk analysis for the "Fats and oils" category or for olive oil specifically, since the annual number of samples is established by law and not updated on the basis of a risk analysis.

## Figure 8 | Checks for pesticide residues in olive oil – required, planned, and carried out (2018-2023)




*Note for Italy:* figures potentially include checks on olives for olive oil (primary production).
*Note for Greece:* figures include checks on olives for olive oil (primary production).
*Note for Belgium:* not all test results were reported to the Commission.

*Source:* ECA, based on data from the member states.

**56** Over the 2018-2023 period, the member states we visited carried out the required checks for pesticides in olive oil for the most part. In most years, they carried out the checks as planned (see ***Figure 8***). Shortages in human and financial resources and the impact of the COVID-19 pandemic may explain the lower number of checks carried out some years.

**57** The results of the checks in member states show that, between 2018 and 2023, only a few samples had pesticide residues above the MRL: one in Italy in 2023 and nine in Greece. The 2019 and 2022 EU reports on pesticide residues in food, published by the European Food Safety Authority (EFSA), confirmed this. In general, olive oil analyses consistently show very low levels of pesticide residues.

## EU control systems for other contaminants are less developed than for pesticides

### The EU legal framework is gradually being improved

**58** Substances other than pesticides can also contaminate olive oil. These can be toxic chemicals that mix with the oil during processing (for example during harvesting, crushing, refining and, for certain oils, transport or packaging) or are present in the environment (such as dioxins) (see ***Annex IV***). Olive oil is also susceptible to adulteration and fraud, which can cause health risks (e.g. the presence of solvent residues in olive-pomace oil sold as extra virgin olive oil).

**59** For some of these contaminants, the EU has defined maximum levels[7] that apply to vegetable oils and fats, including olive oil. For others, such as mineral oil hydrocarbons (MOHs) and plasticisers, there are currently no EU maximum levels for food. As regards plasticisers, there are specific migration limits for certain plasticisers in food contact materials, but not directly in food itself (see ***Box 6***).

[7] Regulation (EC) 2023/915 on maximum levels for certain contaminants in food; Regulation (EC) 1881/2006 setting maximum levels for certain contaminants in foodstuffs (not in force since 24.5.2023).

**Box 6**

### Mineral oil hydrocarbons and plasticisers

MOHs comprise a wide range of chemical compounds derived from crude oil and are categorised in two main groups: mineral oil saturated hydrocarbons (MOSHs) and mineral oil aromatic hydrocarbons (MOAHs). They can get into food through many ways: environmental contamination, lubricants for machinery, processing aids, food or feed additives, or migration from food contact materials. Olive oil's lipophilic nature (i.e. its ability to combine with or dissolve in fat) makes it more prone to accumulating MOHs if contamination occurs.

In 2017, the Commission recommended member states to monitor MOHs. Following EFSA's 2023 risk assessment update, and the confirmed health risks related to MOAHs, the Commission presented a first draft Regulation at the end of 2023 to establish maximum levels for MOAHs. EFSA concluded that dietary exposure to MOSHs is not of concern for any age group.

Plasticisers are added to a material to make it softer and more flexible. They might migrate into food when food contact materials (e.g. containers made with certain plastics) come into contact with food. Plasticisers are generally fat-soluble, so there is a risk that they might migrate from packaging into fatty foods such as oil. As contact time and temperature increase, so does the risk of migration.

The EU's migration limits for certain plasticisers in food contact materials are designed to control how much of a substance can migrate from packaging or processing equipment into food.

**60** Since December 2022, member states have established their own control plans to monitor the concentration of contaminants other than pesticides in food[8]. Until then, the coordinated control programmes at EU level had only covered certain contaminants in food of animal origin. As of reporting year 2023, member states must also include food of non-animal origin in their plans[9]. The control plan should set out:

(a) justified combinations of contaminants/contaminant groups and commodity groups to be checked,

(b) a sampling strategy, and

(c) the control frequency.

[8] Regulation (EU) 2017/625 on official controls (Official Controls Regulation).

[9] Regulation (EU) 2022/932 on practical arrangements for the performance of official controls as regards contaminants in food; Regulation (EU) 2022/931 laying down rules for the performance of official controls as regards contaminants in food.

**61** In 2022, the Commission created a template for member states to draw up their control plans for contaminants and also developed a guidance document for member states. However, the 2023, 2024 and 2025 control plans that Belgium, Greece and Italy sent to the Commission did not specify which contaminants would be checked for which product groups. Additionally, in 2023, the Commission started assessing member states' control plans for contaminants, including food of non-animal origin. We have no evidence of the Commission insisting that member states include more detailed information or justifications.

### Member states included olive oil in their control plans, but what was checked and why is not clear

**62** The member states we visited have their own control plans for contaminants other than pesticides for the broader food category "Fats and oils", which includes olive oil. There are no specific plans for olive oil, and the number of samples and the choice of contaminants depend on the risks identified for the broader category. The four member states we visited make different choices regarding which contaminants to check for in fats and oils (including olive oil) (see ***Annex V***) and when. They do not check for certain contaminants, such as MOHs and plasticisers, because there are no EU maximum levels for these substances in food.

**63** Member states follow different approaches and do not always document their risk analyses or justify their choices. The Italian control plans for contaminants do not include a proper risk analysis justifying the contaminants to be checked in the "Fats and oils" category. Greece specifically includes olive oil in its control plans, but not a documented risk analysis. In Spain and Belgium, checks on contaminants in olive oil are based on risk analyses conducted annually per contaminant, based on relevant parameters and data. Olive oil is usually part of the vegetable oil category and is sometimes specifically targeted.

**64** The results of the member state checks show that the number of samples with contaminant concentrations (other than pesticides) above the legal threshold is very low. From 2018 to 2023, there was one sample in Spain, one in Italy and two in Belgium. Member states do not have to collect data on the presence of contaminants for which no maximum levels have been set.

## Olive oil imported from non-EU countries is not systematically checked for pesticides and other contaminants

**65** The EU imports the equivalent of around 9 % of its annual olive oil production (see ***Annex I***, paragraph ***03*** ). However, none of the member states we visited explicitly consider

olive oil imported from non-EU countries in their risk analyses for pesticides and other contaminants. Spain has carried out risk assessments for imported products via border control posts only since 2023. Furthermore, it has no specific risk assessment or control plan for olive oil imports. In Italy, the control plan on imports does not consider relevant risk factors (such as the categories of imported products and their origin). Belgium does not plan any checks on olive oil at border control posts and Greece only introduced these in 2024.

**66** Checks on imported olive oil from non-EU countries regarding pesticides and other contaminants are either non-existent or very limited in the member states visited. Italy did not adhere to its plan to sample one olive oil consignment per year at each border control post: in 2023 and 2024, no consignments were checked at the main entry points for olive oil. Olive oil imports into Spain are not systematically tested for contaminants. Between 2018 and 2023, only three samples were analysed for pesticide residues, and 50 for other contaminants.

## The EU legal framework and traceability checks do not always enable the identification of a product's origin

**67** Traceability refers to the ability to trace a product through all stages of production, processing, and distribution. It allows consumers to know where and how the olives were harvested and processed. Traceability is also essential for checking the authenticity of the olive oil. Furthermore, traceability is essential when contamination occurs and there is a need to ensure compliance with food safety requirements.

**68** We assessed whether:

- there is a clear legal framework and requirements for traceability and the Commission provides support for their implementation;
- member states check traceability aspects both during food safety checks and during conformity checks;
- for a sample of 24 different olive oils, the place of origin on the label corresponds to the geographical area where the olives were harvested and the mill is located.

## The Commission sets legal requirements for traceability, but has not defined how member states should check them

**69** The traceability of olive oil is governed by:

- the General Food Law Regulation, which requires food and feed businesses to be able to identify at least the immediate supplier of their goods ("one step back"), as well as the immediate subsequent recipients or clients to whom they delivered goods ("one step forward") – this requirement does not apply outside the EU;
- EU rules on marketing standards for olive oil that specifically require indicating the place of origin, as well as keeping records to prove the origin and other information on the label[10].

**70** According to olive oil marketing standards, the label of extra virgin and virgin olive oils must state the place of origin. For olive oils of EU-origin, it should be possible to trace them back to the geographical area where the olives were harvested and to the mill where they were crushed. For olive oils of non-EU origin, it should be possible to trace them back to their country of origin. To comply with this requirement, specific operators must keep documents and records that make it possible to identify the origin of the olive oil and check whether it corresponds to the information on the label.

**71** The olive oil harvest date is an indicator of freshness and quality, and refers to the date when the olives were harvested. EU rules state that the label of extra virgin and virgin olive oils can include the harvest year only if 100 % of the content comes from that same harvest. It should be possible to verify the accuracy of such labelling claims through the traceability records.

**72** Traceability aspects need to be checked as part of the official controls on food safety and during the conformity checks on olive oil. In their annual reporting to the Commission on the results of conformity checks, member states must report on whether the way the origin is displayed on the label complies with EU requirements. Member states are not required to explicitly report on the results of traceability checks.

**73** The EU legislation does not specify how or when traceability aspects (e.g. place of origin, mass balance) should be checked. The Commission has not issued any guidance either. We found that member states' interpretation of traceability requirements differs. As a result, some member states have developed their own methodologies and take different approaches to checking traceability (see paragraphs ***75-80*** and ***Box 7***).

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[10] Article 5 of Regulation (EU) 2022/2105; Articles 8 and 11 of Regulation (EU) 2022/2104.

**74** Two of the four member states we visited adopt their own rules to implement EU traceability requirements, for example:

- mandatory registration in the national electronic register recording every movement of olive oil (Spain and Italy);
- mandatory indication of the harvest year for olive oil produced and sold in Italy (see also ***Box 2***);
- mandatory origin indication for bulk olive oil held in warehouses which has not yet been categorised (Italy).

## Member states include traceability in the scope of their checks on olive oil, but the verification level varies

**75** The member states we visited generally include traceability in the scope of their **food safety checks** on olive oil operators. All four check whether the operator has traceability systems/registers in place. Three member states systematically check traceability during food safety checks, while in Italy this is left to the discretion of the inspector.

**76** We found that member states have different approaches when carrying out traceability checks.

- The Greek authorities carry out joint food safety and conformity checks, during which the traceability check is limited to verifying the first-level supplier ("one step back").
- Italy follows the required "one step back, one step forward" approach during food safety checks on traceability. Inspections focus on outgoing products, checking the origin of the olive oil indicated on the label against the documentation available at the operator's premises.
- In Spain and Belgium, food safety traceability checks go beyond what is required by EU law. They check whether the products can be traced throughout the supply chain and examine the traceability records of both incoming and outgoing products.

**77** During the **conformity checks** on marketing standards, for extra virgin and virgin olive oils, the place of origin is the main requirement to check (see paragraph ***70***). To comply with this requirement, olive oil operators whose name is indicated on the label need to be able to trace the product back to the origin indicated on the label. We found that two of the four member states we visited do not systematically check whether the origin mentioned on the label is correct.

**78** In Spain and Italy, verifying the origin of olive oil is one of the main components of conformity checks at all stages of the supply chain. Operators in both member states are required to have traceability systems and procedures in place and must record every movement of olive oil (and in some regions, also olives) in an electronic register (see ***Box 7***), which is verified during inspections. This goes beyond the EU requirements. The registers aim to increase transparency and reduce the risk of fraud. They allow the authorities to carry out thorough traceability checks when inspecting operators and to trace the products back to the olive farmers and parcel of land where the olives were grown.

### Box 7

### Olive oil registers in Spain and Italy

Italy and Spain have national registers where all operators are required to register every internal (within the same establishment) and external (transported) movement of olive oil.

In Spain, internal movements must be recorded **in real time** and external movements **in advance** (the system generates the transport document that accompanies the oil). In Italy, operators must record every movement **within six days** of the transfer. In Spain, olive oil imports from EU and non-EU countries must be recorded by the final consignee **before** the oil enters national territory, whereas in Italy this is done only **after** the oil has been unloaded for the first time on Italian soil by an operator.

**79** In Greece and Belgium, place-of-origin checks are less exhaustive. In Greece, the place of origin of products with geographical indications, or of organic products, is checked and traced back to the olive farmer. For extra virgin and virgin olive oils, traceability checks follow the “one step back” approach (see paragraph ***76***). Checks at retail level do not include verifying the accuracy of the place of origin. At the time of the audit, Greece declared it was working on a digital system for the mandatory declaration of data regarding olives and olive oil (such as harvest data, olive oil production, processing, trade and stock). Authorities in Belgium do not check the accuracy of the place of origin indicated on the label.

**80** An important element of the traceability check is a mass balance exercise, which looks at the correlation between incoming and outgoing goods, as well as the stock on the spot. The mass balance exercise helps to prevent fraud and ensure quality. We found that, of the four member states we visited, only Spain and Italy systematically carry out mass balance exercises for olive oil during their conformity checks.

## Results of the traceability exercise of the case study: some olive oils could not be traced back

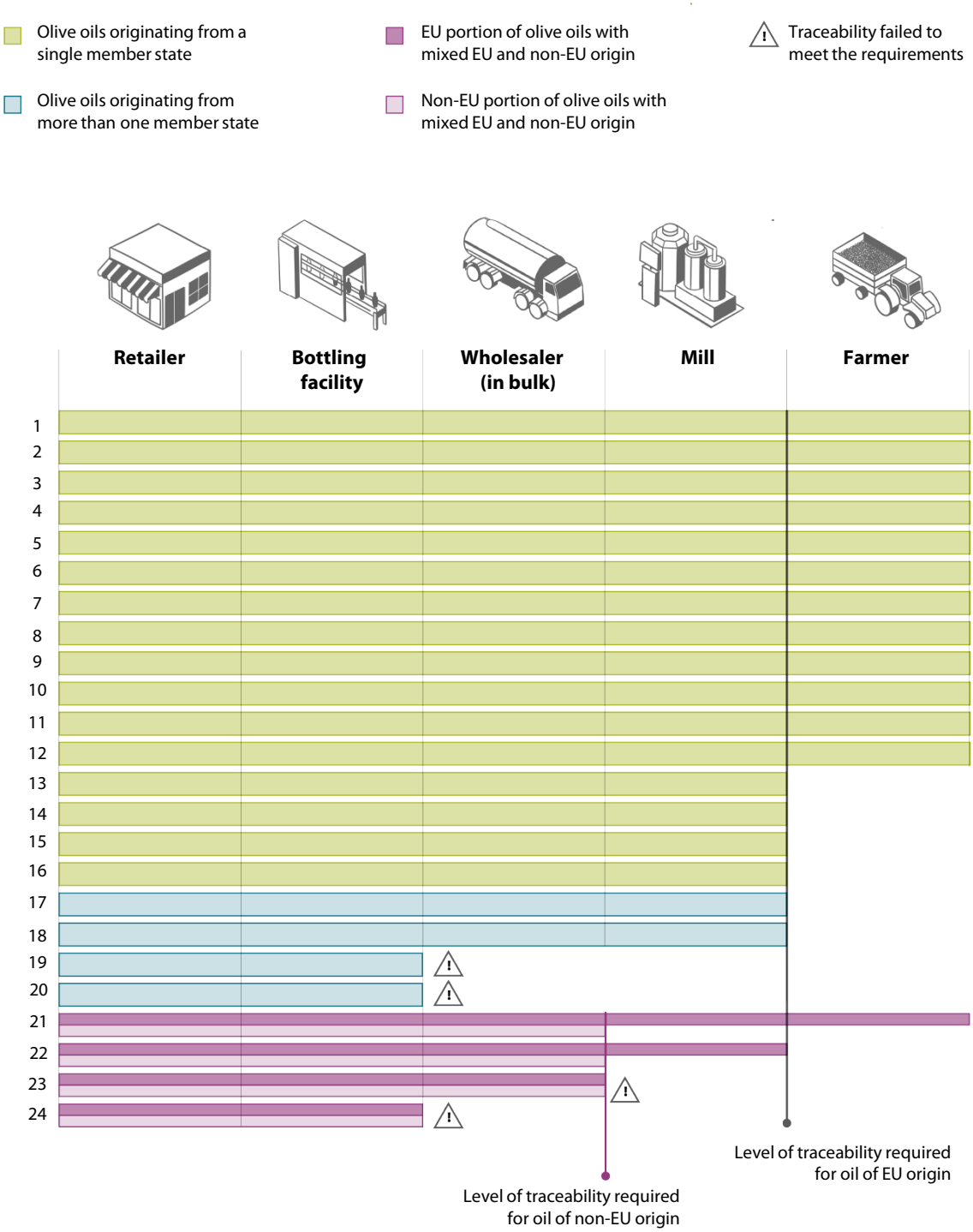
**81** We asked the competent authorities of the four member states we visited to carry out a traceability exercise for the 28 different olive oils purchased for the case study (see ***Annex III***) and to provide us with traceability records, which would allow us to trace each olive oil through all stages of production (bottling facility, mill, olive farmer).

**82** Our sample comprised 24 extra virgin or virgin olive oils and four refined olive oils. According to the EU's marketing standards for olive oil, the place of origin on the label of extra virgin and virgin olive oil must correspond to the geographical area where the olives were harvested and pressed (see paragraph ***70***).

**83** For the 24 olive oils that were required to mention the place of origin, the results of the traceability exercise are as follows (see also ***Figure 9***):

- all 16 olive oils produced in a single member state could be traced back to the geographical area where the olives had been harvested and pressed as required by the Regulation – four to the mills and 12 even further back to the farmers;
- two out of the four olive oils with EU origin (from several member states), could not be traced back to the geographical area where the olives had been harvested and pressed;
- two out of the four olive oils with mixed EU and non-EU origin did not conform to the traceability requirements, one regarding its non-EU portion and the other regarding both its EU and non-EU portions.

## Figure 9 | Results of the traceability exercise, by origin of the olive oil, for the 24 different olive oils that require place of origin labelling




*Source:* ECA, based on the results of the case study.

**84** The results of this exercise reveal shortcomings in the traceability of olive oil in the EU. With regard to marketing standards, we could not confirm the place of origin on the label of four out of the 24 olive oils that were required to mention it. In addition, from the viewpoint of food safety traceability requirements (see paragraph *69*), only half of the oils

could be fully traced back to the farm level, using the “one step back” approach, and cooperation between the competent authorities regarding olive oil originating from more than one EU member state is not always effective. This is because, they could not fully trace any of the olive oils back to farm level beyond their national borders.

This report was adopted by Chamber I, headed by Mrs Joëlle Elvinger, Member of the Court of Auditors, in Luxembourg at its meeting of 12 November 2025.

*For the Court of Auditors*

Tony Murphy
*President*

# Annexes

## Annex I – About the audit

**01** The EU is the world's leading producer and consumer of olive oil (61 % and 45 % of the world total respectively[1]), as well as its leading exporter (65 %[2]). Olive oil is produced in nine EU member states: Spain, Italy, Greece, Portugal, France, Slovenia, Croatia, Cyprus and Malta. The EU's olive oil production is mostly concentrated in just four member states, which account for 99 % of the total: Spain (60 %), Italy (17 %), Greece (14 %) and Portugal (8 %). In 2022/2023, around 4.7 million hectares were dedicated to the cultivation of olive trees for oil[3]. EU olive oil is a high value product for the external market. In the 2023/2024 marketing year, the EU had a positive trade balance of olive oil of about €4.4 billion[4].

**02** The EU legislation[5] defines eight different categories of olive oil (see ***Figure 1***), four of which can be sold to consumers. The categories are based on the way the oil is obtained and on some of its characteristics, such as acidity. Virgin olive oils are obtained directly from olives, solely by mechanical or other physical means. Refined olive oil undergoes various physical or chemical processes that change certain characteristics (usually taste, smell and colour). Olive-pomace oil is extracted from olive pulp after the first pressing, using solvents.

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1 European Commission, "Dashboard: olive oil", average of 2019/2020 to 2023/2024 harvest years.

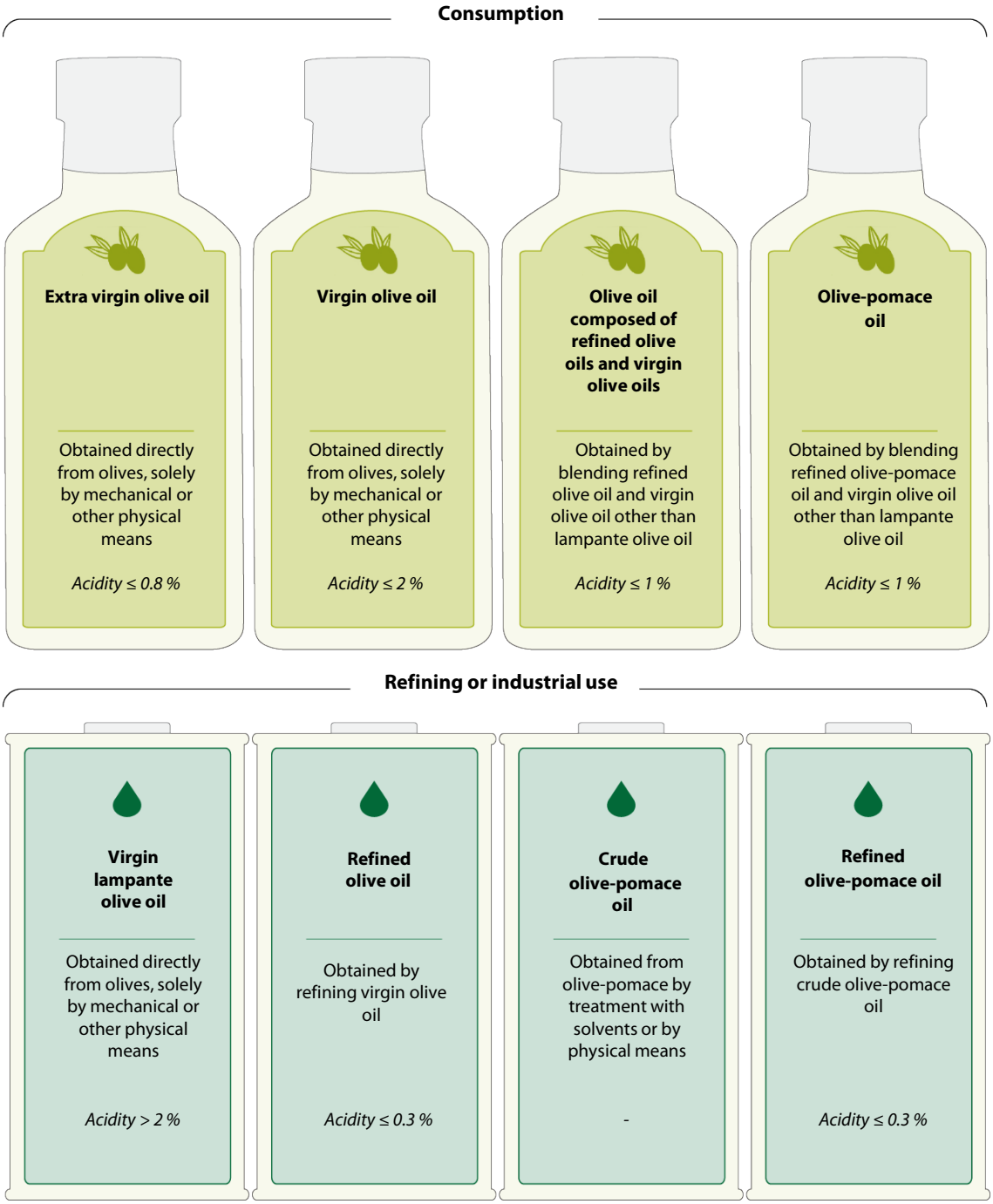
2 European Commission, "Olive oil – An overview of the production and marketing of olive oil in the EU".

3 European Commission, "Olive oil short-term outlook".

4 European Commission, "Dashboard: olive oil".

5 Annex I, Part VII, of Regulation (EU) No 1308/2013.

## Figure 1 | Categories of olive oil




*Source:* ECA, based on EU legislation and the European Commission's fact sheet on olive oil, image inspired by the OLEUM project.

**03** The EU exports the equivalent of around 38 % of its annual olive oil production and imports around 9 %[6], more than half of which is re-exported. The main importers and exporters are Spain (57 % of EU imports and 56 % of EU exports) and Italy (33 % of imports

[6] European Commission, Comext database, average of 2019/2020 to 2023/2024 harvest years.

and 29 % of exports)[7]. Tunisia is the main exporter to the EU (75 % of the volume imported between the 2019/2020 and 2023/2024 harvest years), followed by Türkiye (7.8 %), Argentina (3.9 %) and Morocco (3.5 %)[8]. The EU mostly imports extra virgin olive oil, followed by virgin lampante olive oil. The US is the main importer of EU olive oil[9].

## Policy framework

**04** Olive oil is highly regulated. To guarantee a high level of consumer protection, the EU has put in place a system of controls to ensure that the olive oil that consumers can buy in the EU is genuine and safe, and that its origin is traceable. Genuine olive oil has not been mixed with anything other than olive oil and has the quality and purity of the category under which it is sold.

**05** Olive oil is covered by specific legislation imposing requirements on marketing and traceability:

- Regulation (EU) No 1308/2013 defining the different olive oil categories;
- Regulation (EU) 2022/2104 on marketing standards, establishing specific requirements on labelling, packaging and traceability; and
- Regulation (EU) 2022/2105 on conformity checks, defining how those standards should be upheld by member states.

**06** Olive oil is also subject to the EU's food safety requirements[10] and therefore falls within the remit of the EU's harmonised framework for official controls on food[11]. To be allowed on the European market, imported olive oil must comply with EU food safety rules and marketing standards for olive oil. Imports of bottled olive oil must also follow the applicable labelling and packaging rules[12]. Imports must undergo risk-based conformity checks and official controls, either at border control posts, or in later stages (such as storage, processing, bottling or retail).

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7 European Commission, "Olive oil and table olives trade", average of 2019/2020 to 2023/2024 harvest years.

8 International Olive Council, "Import figures of olive oil in the extra-EU(27)".

9 European Commission, "Olive oil and table olives trade".

10 Regulation (EC) 178/2002.

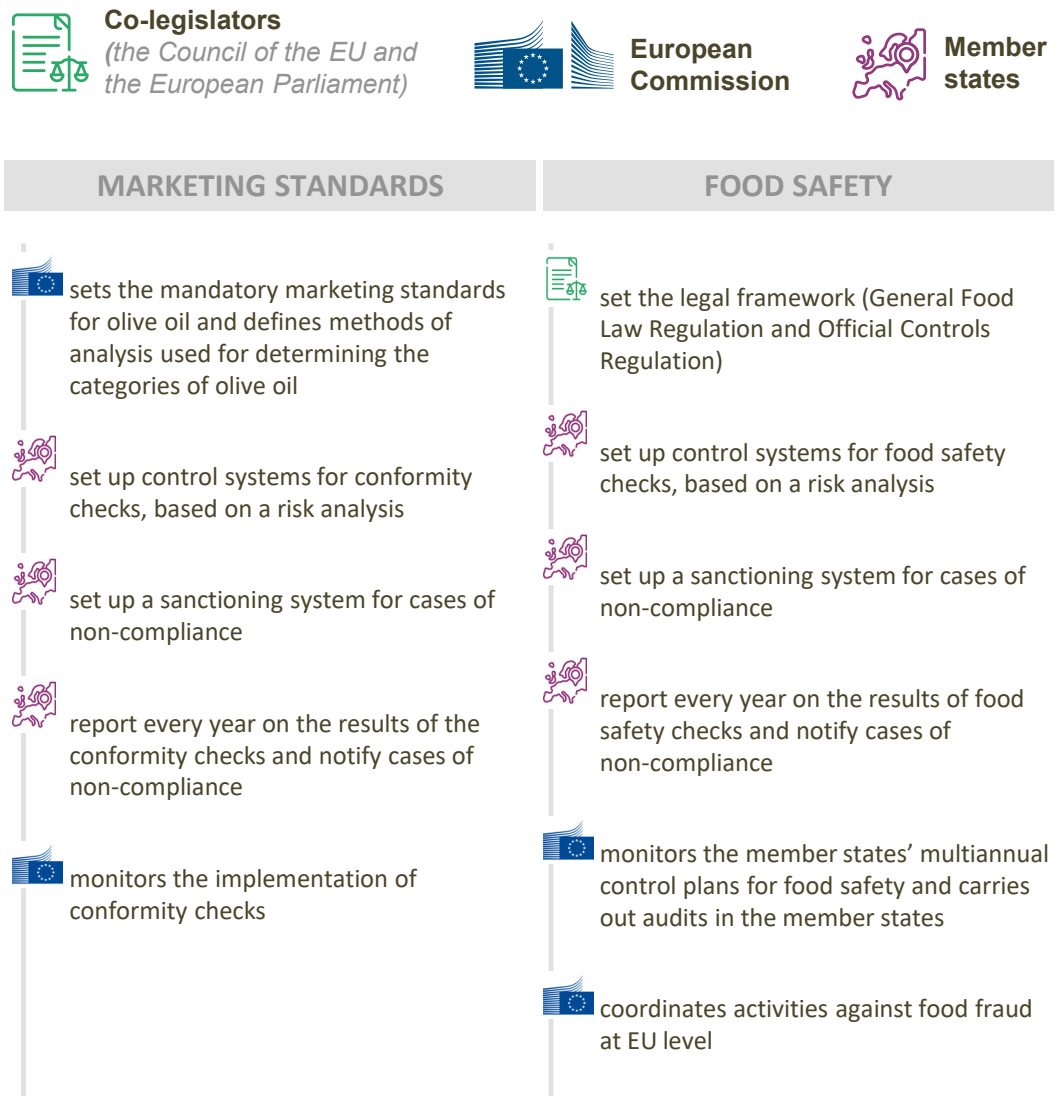
11 Regulation (EU) 2017/625.

12 Regulation (EU) 1169/2011 on the provision of food information to consumers.

## Roles and responsibilities

**07** The Commission's and member states' roles and responsibilities regarding control systems for olive oil are explained in ***Figure 2***. The Directorate-General for Agriculture and Rural Development (DG AGRI) is responsible for the aspects related to marketing standards, whereas the Directorate-General for Health and Food Safety (DG SANTE) is responsible for those related to food safety.

**Figure 2 | Roles and responsibilities related to control systems for olive oil in the EU**




*Source:* ECA.

**08** Regulation (EU) 2022/2104 gives member states some flexibility to set specific standards, such as whether to prohibit blending olive oil with other vegetable oils, whether to allow packaging sizes that exceed the limits set by the Regulation, or whether to set rules regarding the indication of the harvest year. The Commission monitors how these national

rules are implemented. Furthermore, some member states, such as Spain and Italy, have established their own national rules (e.g. for traceability) that go beyond the EU requirements.

## Audit scope and approach

**09** We examined the control systems put in place by the member states and the Commission to ensure that olive oil sold in the EU is genuine (as regards olive oil categories), safe to consume, and can be traced back to its origin. We assessed whether member states have an effective system of checks and penalties regarding the compliance of olive oil with marketing standards, and regarding contaminants and traceability. We also assessed whether the Commission supervises member states' control systems and provides support. The audit did not cover all labelling requirements for olive oil, such as nutritional value, nor specific traceability requirements for organic olive oil.

**10** Our audit covered the period from 2018 to 2023. However, where possible, we used the latest information available. We met with the Commission (DG SANTE, DG AGRI) and interviewed relevant authorities in Belgium, Greece, Spain and Italy. We selected these member states because Greece, Spain and Italy are responsible for around 91 % of the EU's olive oil production. Among the non-producing countries, Belgium is the biggest exporter of EU olive oil and importer of extra-EU olive oil[13]. We obtained audit evidence from different sources, as presented in ***Figure 3***.

### Figure 3 | Work carried out


*Source:* ECA.

**11** In addition, we carried out a case study to obtain additional and direct evidence of compliance with the standards from olive oil sold to consumers. We purchased 28 different

[13] European Commission, "Olive oil and table olives trade".

olive oils – seven in each of the member states we visited during the audit – and had an independent laboratory test them for all the characteristics set out in Regulation (EU) 2022/2104 (see ***Annex III***). We also asked the competent authorities to provide us with the traceability records of these olive oils, to check whether the olive oil could be traced to its origin.

# Annex II – Overview of relevant quality and purity parameters for extra virgin olive oil and methods of analysis

The table below lists the parameters in the order they should be tested (if this order is not followed, all the parameters must be tested). As soon as one of the results shows that the oil does not match the declared category, testing can stop.

| No | Parameter | Type of parameter | Reasons for testing this parameter | International Olive Council method |
|---|---|---|---|---|
| 1 | Acidity (%) | Quality | It is an indicator of the quality of the olives: when olives are damaged, overripe, or not processed promptly after harvesting, the acidity increases | COI/T.20/Doc. No 34 (Determination of free fatty acids, cold method) |
| 2 | Peroxide value ($O_2$ meq/kg) | Quality | It indicates the degree of oxidation (state of preservation of the oil) | COI/T.20/Doc. No 35 (Determination of peroxide value) |
| 3 | UV spectrometry (K268 or K270) | Quality | They determine the degree of degradation: the longer an olive oil is stored, the higher the UV absorption and the lower the quality | COI/T.20/Doc. No 19 (Spectrophotometric investigation in the ultraviolet) |
| 4 | UV spectrometry (ΔK) | Quality | | |
| 5 | UV spectrometry (K232) | Quality | | |
| 6 | Organoleptic assessment | Quality | It allows for the detection of certain negative attributes and the measurement of the intensity of positive attributes (fruitiness, bitterness and pungency) | COI/T.20/Doc. No 15 (Sensory analysis of olive oil – Method for the organoleptic assessment of virgin olive oil) – except for points 4.4 and 10.4 |
| 7 | Fatty acid ethyl esters (mg/kg) | Quality | It is an indicator of the fermentation of the olives before oil extraction | COI/T.20/Doc. No 33 (Determination of fatty acid methyl esters by gas chromatography) |

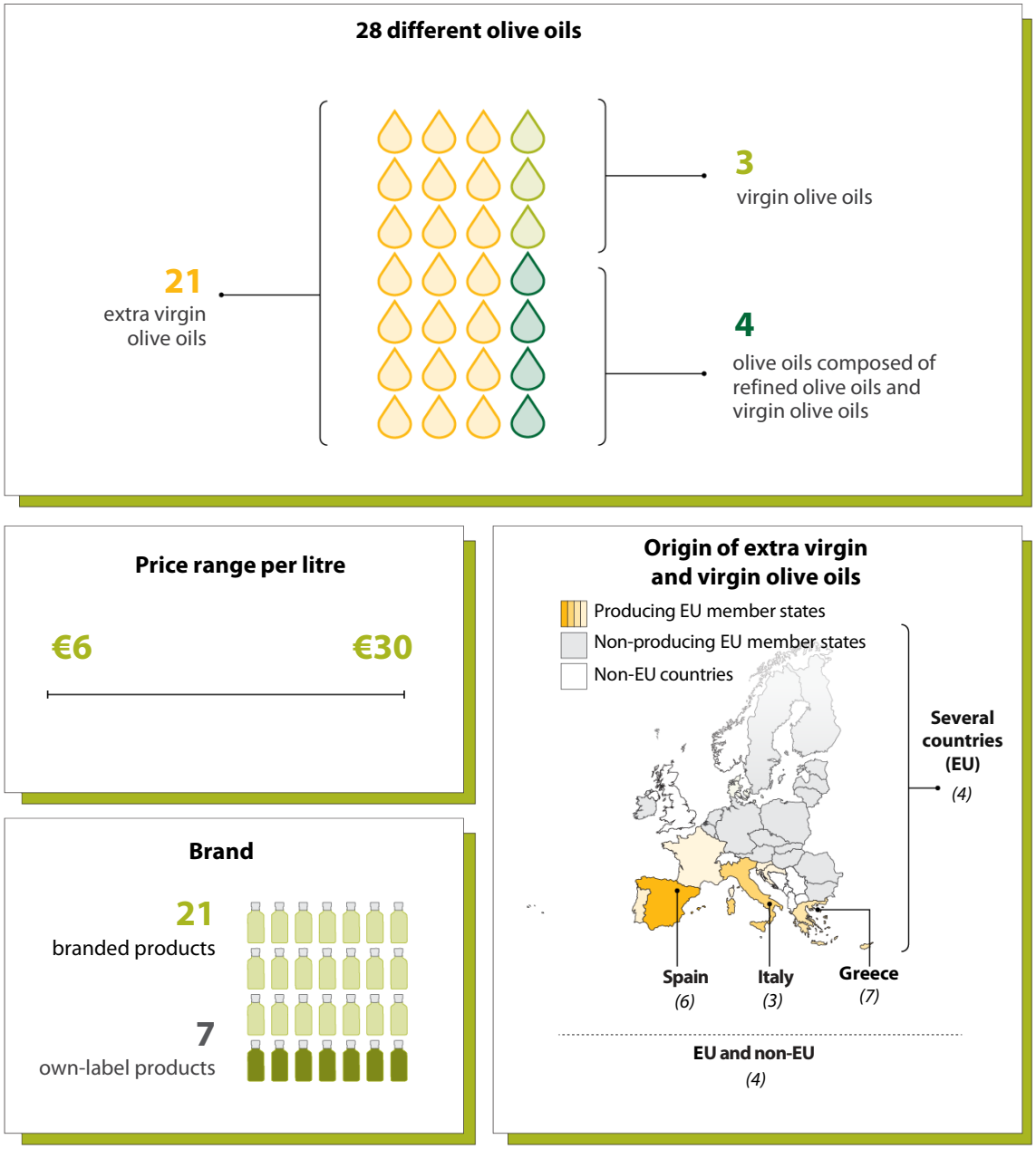
| No | Parameter | Type of parameter | Reasons for testing this parameter | International Olive Council method |
|---|---|---|---|---|
| 8 | Stigmastadienes (mg/kg) | Purity | It is used to detect whether olive oil has been refined | COI/T-20/Doc. No 11 (Determination of stigmastadienes in vegetable oils) |
| 9 | Trans-isomers of fatty acids (%) | Purity | It is used to detect whether olive oil has been refined or whether it has been mixed with other oils that have undergone refining or hydrogenation | COI/T.20/Doc. No 33 (Determination of fatty acid methyl esters by gas chromatography) |
| 10 | Fatty acid composition | Purity | It is used to determine whether an oil other than olive oil has been added | |
| 11 | ΔECN42 | Purity | It is used to verify whether seed oil has been added | COI/T.20/Doc. No 20 (Determination of the difference between actual and theoretical content of triacyglycerols with ECN 42) |
| 12 | Sterol composition and total sterol content | Purity | It is used to flag oils that contain extraneous oils (i.e. not from olives) | COI/T.20/Doc. No 26 (Determination of the composition and content of sterols, triterpenic dialcohols and aliphatic alcohols by capillary gas chromatography) |
| 13 | Erythrodiol and uvaol (%) | Purity | It determines whether olive pomace was used | |
| 14 | Waxes (mg/kg) C42+C44+C46 | Purity | It determines whether olive pomace was used | COI/T.20/Doc. No 28 (Determination of the content of waxes and fatty acid ethyl esters by capillary gas chromatography) |
| 15 | 2-glyceryl monopalmitate (%) | Purity | It measures adulteration with other types of oil, such as palm oil or other vegetable oils, or indicates the degree of processing of the oil (refining or high temperatures) | COI/T.20/Doc. No 23 (Determination of the percentage of 2-glyceryl monopalmitate) |

*Source*: ECA, based on Annexes I and III of Regulation (EU) 2022/2105, and presentations from member states in meetings of the Olive Oil Working Group.

# Annex III – Case study

In each member state we visited, we purchased seven different olive oils in two retail outlets and had them analysed in the laboratory and by organoleptic assessment to determine their characteristics. We selected olive oils from several categories and origins (if available), including both branded and own-label products, all from the same harvest year (2023/2024) (see ***Figure 1***). The selection was therefore not based on a risk analysis but we avoided bottles exposed to conditions that might degrade the quality, such as heat and light. We shipped the bottles via a temperature-controlled carrier to a laboratory in one of the EU member states not involved in the audit. The laboratory, recognised by the International Olive Council, carried out the physico-chemical analyses and organoleptic assessments to determine the characteristics of the olive oils.

## Figure 1 | Case study – characteristics of purchased olive oils




*Source:* ECA.

# Annex IV – Potential sources of contamination in olive oil

| Contaminant | Potential source of contamination |
|---|---|
| Pesticide residues | Pesticides used by olive growers to prevent or control diseases (such as fungi or bacteria) or to help manage insects and other pests that can damage olive trees and reduce yields (e.g. the olive fruit fly or the olive moth) |
| Polycyclic aromatic hydrocarbons | Contamination of the olive skin by environmental factors (dust and particles from smoke and air pollution)<br>Contamination of the olive oil by combustion fumes during the extraction process |
| Heavy metals (lead, cadmium, mercury) | Soil and air that has been polluted with heavy metals due to industrialisation<br>Pesticides or fertilisers |
| Dioxins | The use of certain herbicides and pesticides can lead to dioxin formation<br>Dioxins are by-products of combustion, incineration, and other industrial processes |
| Polychlorinated biphenyls (PCBs) | PCBs were widely used in industrial products (e.g. lubricants, paints, coatings) until they were banned in most countries in the 1980s. They are highly persistent in the environment, so olive trees might absorb these contaminants from soil and water |
| Glycidyl esters, 2-monochloropropanediol (MCPD) and 3-MCPD esters | These heat-induced contaminants appear when vegetable oils are being refined under high temperatures |
| Mineral oil hydrocarbons (MOSHs/MOAHs) | Mineral oil hydrocarbons can originate from various sources, including lubricants used in food processing machinery, packaging materials, and environmental contamination |
| Plasticisers | Packaging or other food contact materials to which plasticisers have been added in order to make the material more flexible, resilient and easier to handle |
| Mycotoxins | Improperly stored olives (e.g. in warm, humid conditions) can develop mould, which may produce mycotoxins<br>Mycotoxins are toxic compounds produced by certain types of fungi |
| Erucic acid | Erucic acid is naturally present in rapeseed oil and mustard oil and is considered harmful when consumed in large amounts<br>It can end up in olive oil through cross-contamination (if olive oil is processed or stored in facilities that also handle oils which are high in erucic acid) or adulteration (non-olive oil blend) |

*Source*: ECA, based on literature review.

# Annex V – Contaminants that member states include in their control plans for the “Fats and oils” category

| | Spain | Italy | Greece | Belgium |
|---|---|---|---|---|
| Polycyclic aromatic hydrocarbons | X | X | X | X |
| Dioxins and polychlorinated biphenyls | X | X | X | X |
| Glycidyl esters, 2-MCPD and 3-MCPD esters | X | X | X | |
| Erucic acid | X | X | | |
| Heavy metals (lead, cadmium, mercury) | X | X | | X |
| Mycotoxins | X | | | |

*Source*: ECA, based on member states’ 2018-2023 sampling plans.

# Abbreviations

| | |
|---|---|
| **EFSA** | European Food Safety Authority |
| **MOAH** | Mineral oil aromatic hydrocarbons |
| **MOH** | Mineral oil hydrocarbons |
| **MOSH** | Mineral oil saturated hydrocarbons |
| **MRL** | Maximum residue level |

# Glossary

| | |
|---|---|
| **Olive oil conformity check** | Check to confirm that olive oil complies with EU rules on categorisation and marketing. |
| **Organoleptic assessment** | Official method of detecting, measuring and describing the positive and negative characteristics of olive oil using the human senses (taste and smell). |
| **Physico-chemical analysis** | Laboratory tests to determine values for a set of physical and chemical properties of olive oil. |

# Replies of the Commission

https://www.eca.europa.eu/en/publications/sr-2026-01

# Timeline

https://www.eca.europa.eu/en/publications/sr-2026-01

# Audit team

The ECA's special reports set out the results of its audits of EU policies and programmes, or of management-related topics from specific budgetary areas. The ECA selects and designs these audit tasks to be of maximum impact by considering the risks to performance or compliance, the level of income or spending involved, forthcoming developments and political and public interest.

This performance audit was carried out by Audit Chamber I – Sustainable use of natural resources, headed by ECA Member Joëlle Elvinger. The audit was led by ECA Member Joëlle Elvinger, supported by Ildikó Preiss, Head of Private Office and Paolo Pesce, Private Office Attaché; José Parente, Principal Manager; Els Brems, Head of Task; Greta Kapustaitė, Deputy Head of Task; Vincenza Ferrucci and Stéphane Gilson, Auditors. Kyriaki Kofini and Zoe Amador Martínez provided linguistic support. Alexandra Damir-Binzaru provided graphical design support.

*From left to right:* Ildikó Preiss, Greta Kapustaitė, José Parente, Joëlle Elvinger, Paolo Pesce, Vincenza Ferrucci, Zoe Amador Martínez

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**The EU is the world's leading olive oil producer, consumer and exporter. The Commission and member states have put in place control systems to ensure that olive oil sold in the EU is genuine (i.e. it corresponds to the declared olive oil category), safe to consume, and can be traced back to its origin. We examined control systems' effectiveness, and whether the Commission oversees these mechanisms in member states and provides support. We found that there is a comprehensive EU legal framework for checks on olive oil, but member states apply it unevenly. We recommend that the Commission strengthen its oversight, clarify and improve certain rules and requirements, and support member states to improve the traceability of olive oil.**

*ECA special report pursuant to Article 287(4), second subparagraph, TFEU.*

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