

Guidance on Authenticity of Dried Herbs and Spices

**Prevention of adulteration and substitution.
Best practices to assess, protect and control.**



Guidance on authenticity of dried herbs and spices

Food companies play an important role in the work to prevent fraud with authenticity and will often be the ones that most often uncover counterfeits. By focusing on the weaknesses in the supply chain, as well as exchanging experiences between the companies and the control authorities, important information will become available. Knowledge of new methods that can detect fraud will also be important in the fight against food fraud.

EU Regulation 2017/625 on official controls (the Control Regulation) states the following about risk-based controls and food fraud, Excerpt "Article 9 no. 2.*The Competent authorities shall perform official controls regularly, with appropriate frequencies determined on a risk basis, to identify possible intentional violations of the rules referred to in Article 1(2), perpetrated through fraudulent or deceptive practices.*

At consumer level, it may not be possible to visually identify characteristics of herbs and spices, and it may even be impossible to identify the origin of the plant when herbs and spices are crushed or ground. All these elements generate a high probability of malpractice, some of them with serious risks to public health (i.e., substitution of the named herb/spice with an allergenic product and/or colour enhancement by non-authorized dyes)

Information from the European Commission's 2019 project indicates that adulterated herbs and spices are present on the EU market but remain undetected.

Based on the EU's control project, a joint working group was established in September 2022, with the industry and the Norwegian Food Safety Authority. The aim was to publish a joint guide on dried herbs and spices and authenticity. The working group was led by the Norwegian Food Safety Authority and has had the following participants: Aquatiq Consult, Nomad Foods - Findus Norway AS, Arne B. Corneliussen AS, REMA 1000 Norway AS, Coop Norway SA, Harlem Food and Eurofins Food & Feed Testing Norway AS. Several of these are members of the Eurofins network group on food crime. **The aim of the guide is to provide a comprehensive overview of useful information and networks around spices and authenticity, and to update it in line with new knowledge.**

This document is not legally binding.

Source of Information:

- The UK Industry Best Practice on Assessing and Protecting Culinary Dried Herbs and Spices [UK Guidance herbs and spices](#)
- [JRC Publications Repository - Fighting fraudulent and deceptive practices in the agri-food chain](#)
- The result of the first EU survey on the authenticity of [EU CCP Herbs and spices \(2019-2021\)](#)
- ESA [European Spice Association](#).
- National Workshop and Joint Working group 2022-2024

Fraud methods are constantly evolving, and this document will be updated as knowledge increases. An important element in the fight against fraud is the development, validation and implementation of new methods, which can detect and quantify the size of the substitution. There have been many innovations in the field of analysis over the past two decades. We hope that this guide will be a useful tool and supplement to the industry's own control and a useful guide also for other authorities.

This guide may also be relevant to other product areas.

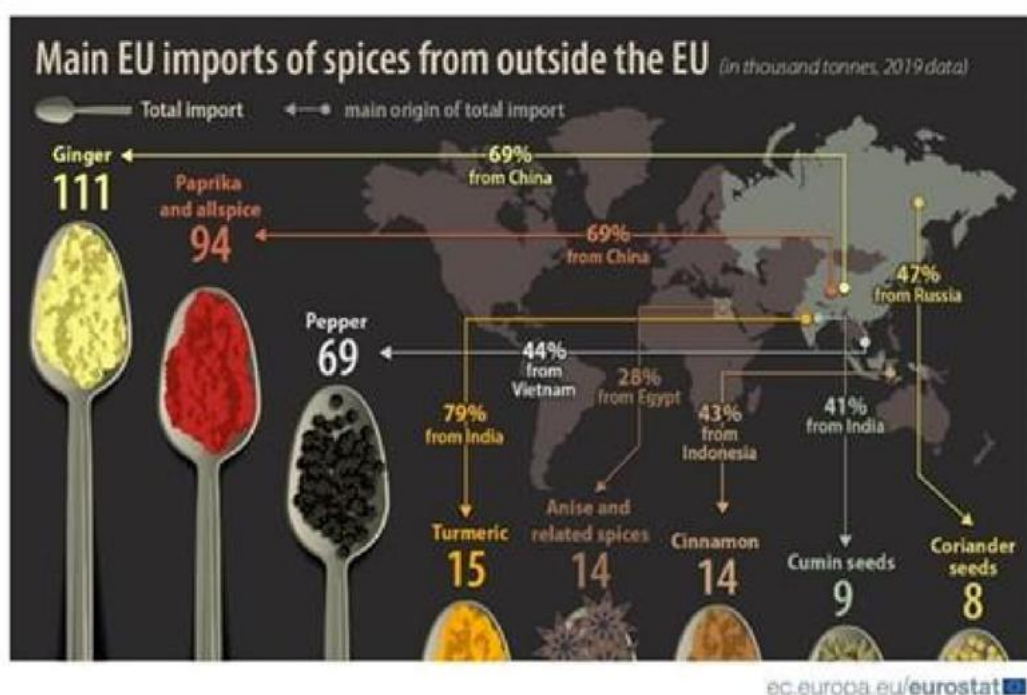


Illustration: EU Commission, DG SANTE.G.5 - Food hygiene, feed and fraud.

Finally, we would like to thank the companies who have been involved. This cooperation has been fundamental for gathering important experience from the industry and focusing on activities that are essential for preventing food crime. First Norwegian Edition published Decembre 2024.

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Norwegian Food Safety Authority, Head Office, Section Border control and Fraud.

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Guidance on authenticity of dried herbs and spices

1. Summary

In 2019, the European Commission initiated a coordinated control project on the authenticity of herbs and spices. The results of this coordinated control plan were launched by the Directorate-General for Health and Food Safety and carried out by 21 EU Member States, Switzerland and Norway.

This was the first time that national authorities responsible for food control and the European Commission pooled their experience and resources to focus on the herbal and spice sector. The goal was to protect consumers from misleading and potentially unsafe products.

Nearly 10,000 analyses were carried out by the JRC1 on 1885 samples, using a variety of innovative analytical techniques to assess the authenticity of six different herbs and spices. The percentage of samples considered for possible adulteration was 17% for pepper, 14% for cumin, 11% for turmeric, 11% for saffron and 6% for paprika/chili. Oregano was identified as the most vulnerable, with 48% of samples. In most cases, oregano was replaced with olive leaves. **The authenticity and purity of herbs and spices were assessed against relevant ISO standards.** In the event that a sample did not comply with these regulations for foreign substances and total ashes, it was considered suspicious of adulteration. On the basis of these findings, the European Commission has already called on businesses to carry out an immediate action plan to remedy the situation that is harmful to the interests and health of consumers, but also to the herbal and spice sector itself and its honest operators.

The European Commission also called on national authorities to increase public control in the sector, with the aim of preventing fraudulent practices and sanctioning fraudsters.¹

This guidance document is a response to the European Commission's request and therefore focuses only on the authenticity of herbs and spices.

2. Introduction

Food fraud has a long history. Even before milk and milk powder were contaminated with melamine in 2008, and the horse meat scandal in 2013, authenticity cases have made major headlines. It is important that food companies keep up to date on potential risks, and that they regularly review their supply chains for raw materials and ingredients in terms of vulnerability to food fraud. The ability to recognise fraudulent activity is a challenge not only due to the various forms it can take, but also because of the need to distinguish conscious actions from the unintentional or unconscious.

[JRC Publications Repository - Fighting fraudulent and deceptive practices in the agri-food chain](#)

¹ [EU CCP Herbs and spices \(2019-2021\)](#)

This guide has been developed as a tool for importers and producers, but also as a basic document for the Norwegian Food Safety Authority in its work to control this challenging area.

In 2019, the EU countries produced approximately 100 000 tons of herbs and spices a year and imported over three times as much annually. These are mostly spices from Asia, Africa, Latin America and the Caribbean. In 2019, the member states of the EU imported 379 000 tonnes of spices from non-EU countries.

Businesses dealing with spices have a great responsibility to ensure that the food products are safe and that the content is of the right quality. Many companies have already implemented ways to counter global fraud threats, but this is not enough. Transparency and data sharing between national authorities, bodies and the industry is crucial in order to detect and prevent fraud. On the one hand, global demand for herbs and spices is increasing, partly due to an increasing popularity as an ingredient in ready-made dishes, an interest in new flavours and ethnic foods, as well as alleged health effects. On the other hand, supply chains in the herbal and spice sectors tend to be long, complex, and can pass through many countries before reaching consumers. As with all raw materials and their supply chains, the focus should always be on prevention rather than detection.

This guide concentrates on identifying and assessing general vulnerabilities, as vulnerability assessment is part of the prevention of food fraud. Vulnerability assessment is not a regulatory requirement, but it is necessary that the company focuses on ensuring that their products are safe.

2.1. Scope

Herbs and spices are defined as edible parts extracted from plants, which add flavour. Spices can come from the following parts of plants: roots, rhizomes, stems, leaves, bark, flowers, fruits and seeds. One usually thinks of herbs as plants that do not develop wood structure.

This guide document focuses on the authenticity of herbs and spices and therefore does not cover general controls of food safety. However, the requirements for food safety and labelling still apply.

Potential cross-contamination is beyond the scope of this document.

2.2. How to use The Guide

This guide is designed to provide an overview of the supply chain, from purchase to product being placed on the market, either to a company or to the final consumer. The principles contained in this document can be applied by all stages of the supply chain and are intended to facilitate the sharing of best practices to understand the role each link has in ensuring the authenticity of their products.

The guide highlights the following control areas in the supply chain:

- Product / Raw material
- Supply Chain
- Prevention, verification and detection measures.

Product, Supply Chain, Prevention

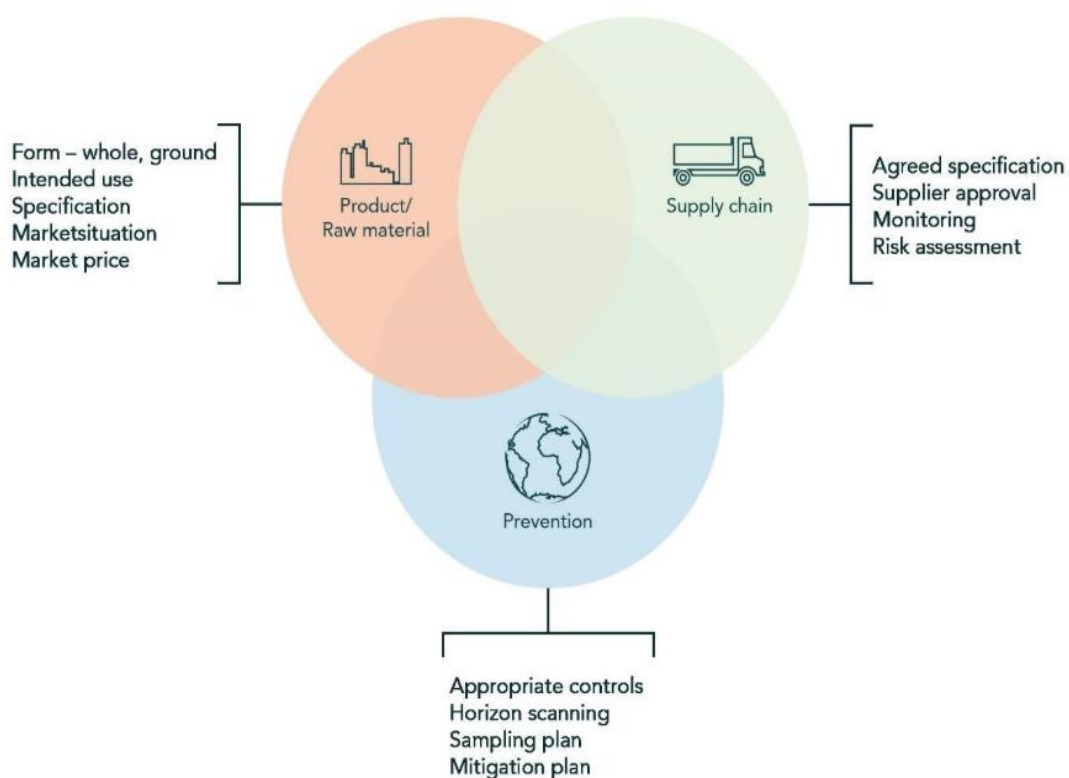


Figure 1. Product - supply chain - Prevention - Examples of control points

3. Product/ Raw Material

A detailed product specification is the foundation of a purchase agreement! This gives a clear understanding of the species and the details of the raw material in question.

A detailed specification should include at least the following:

Botanical species, purity, key attributes, e.g. the content of volatile oils, physical attributes such as particle size, fineness, density (density), claims such as origin or ecological content. More information and guidance can be found in ISO standards, in the ESA list "Culinary Herbs and Spices" and in ISO/TC standards.

When designing the product specification, any claims to the final product should be considered (e.g. organic or origin) and any known risks associated with cross-contamination or allergens.

Important attributes within an analysis:

- Content of volatile oils, e.g. Piperine for pepper; curcumin for turmeric; Scoville strength units (or capsaicin content) for chili; colour strength; safranal content for saffron.
- Physical attributes (e.g. particle size, fineness and density (density)).
- The physical shape of the product - whole, milled, crushed or chopped material.

It is important to know who the owner of the material at the time of grinding is.

The reason for this is that grinding or mixing herbs and spices is the point in the supply chain where the risk is high for counterfeiting.

Methods of identifying forgery:

Depending on the exact nature of the falsification, sampling should be considered using appropriate analytical methods that are either accredited or new validated methods. See examples of methods, including recommended controls, in the chapter "Developing test strategy - Selection of test methods and laboratories" in chapter 7.

Basic questions:

- Does the person responsible for food safety have expertise concerning food fraud?
- Do you have a multidisciplinary team that focuses on the risk of food fraud?
- What sources of information concerning food fraud do you use?
- Do you have a detailed product specification with relevant information about your product?
- Are you buying from an approved/certified supplier?
- Do you buy the product in whole or in a ground form?
- Do you buy the product as a mixture or as a spice/an herb?
- What is the intended use?
- How is the market for this commodity?
- Is the price consistent with the material you purchase?
- If you buy herbs or spices that are exclusive or of high value, i.e. an organic product, saffron or vanilla?
- Are there any claims that present risks related to authenticity (e.g. organic, from a particular geographical region (i.e. Madagascar, Provence) etc.

Organic products. It is important to pay attention to /fraud related to organic herbs and spices. There is a guide [to organic farming](#), point: 1.12. what to do in case of suspected irregularities or offences.

4. Supply chain

To reduce the risks associated with authenticity, it is important to know the length and complexity of the supply chain of your business and have established a system to monitor it.

Supplier approval is an important factor in ensuring the integrity of products and may include the use of the following standards:

The use of a supplier with a certification approved by GFSI (BRC, IFS, FSSC 22000, SQF) will ensure that the supplier has established procedures that are useful to prevent the risks associated with authenticity. Certification is checked by third-party auditors. It is also possible to be certified re. to

ISO 22000 or ISO 9001 to put in place a good management system. It is possible to build on ISO 22000 for an FSSC 22000 certification.

Based on identified risks, targeted supply chain audits are important to ensure visibility and transparency about the original source of raw material, processing, ownership and storage at every point of the supply chain.

Tool for assessing vulnerability related to food fraud

It is important that the company is aware of and has assessed vulnerabilities in their supply chain,

i.e.: Mapping the chain -> How complex is your supply chain?

- What is the market for this commodity?
- Where are the vulnerabilities in your supply chain?
- Do you have a system for approving your suppliers?
- Are the suppliers certified to any quality standard?

If the provider is certified, they are already checked by third party auditors. The supplier is already obliged to have established several systems that are useful to prevent risks associated with authenticity.

If the supplier is not certified, it is important to ensure that the supplier meets the legal requirements. How do you approve the suppliers (e.g. questionnaire, audit and how often)? What criteria do you use? E.g. customised HACCP and vulnerability assessment? How do you approve, monitor and risk your suppliers and raw materials?

If suppliers have a good reputation, are well known in the market they operate in and have their own well-known brand, it can be easier to control and get answers to important questions in order to verify.

In addition to the undertakings' own controls, verification measures may include:

- Submission of samples before delivery for approval prior to purchase, and approval upon arrival.
- In addition, it may be considered taking samples of other batches.
- You may find that a pre-sample of the first delivery is good, but that it may be important to have your own reference samples to verify that you get what you have ordered.
- You should have plans for spot checks. You can tell the supplier that you are doing spot checks.

Important checkpoints:

- Are you buying from an importer (agent and broker) or straight from the manufacturer?
- Do you receive the material in whole form? If yes, do you know those who have grown it?
- Is the price consistent with the material purchased?
- Do you use certified farmers? (EFSA, Global GAP) - If not - do you know the supply chain all the way back to the field?
- How do you monitor your suppliers? (revision, questionnaire and certificate). Within what
- time frame will the manufacturer be able to trace back to the field?
- Will they be able to track the product one step back in four hours?
- How many stages are there in your supply chain?
- Is the importer/agent/broker certified to a GFSI standard for agents and brokers?
- Is the product you purchase within the scope of these certifications?

5. Prevention, verification and detection measures

Knowing the supply chain is a key factor in understanding vulnerabilities and knowing how to deal with them.

This requires regular reviews according to the most up-to-date and available market information. When mapping your supply chain for authenticity, you should consider potential vulnerabilities at each stage of the chain. The number of countries/regions/locations and intermediaries that the original ingredient has been processed by or passed through - to ensure visibility and transparency in the supply chain.

It is important to check fraud history when it comes to a particular ingredient/ingredient category, as this may point to possible future vulnerabilities.

Other important factors include Seasonal variation and availability of supply /access to supplies, ² see UK Guidance herbs and spices.

Weather events and natural disasters (e.g. droughts, floods and earthquakes) that may impact supply availability. Cultural and geopolitical events (e.g. political instability, war) and economic indicators can also make fraud more attractive.

«[FFN monthly](#) - The [European Commission](#)» is a monthly update from the European Commission on findings due to/based on suspected or uncovered fraud, and important information to keep up with regarding findings made on fraud with spices.

Do you have a contingency plan if you detect fraud with products you sell? Are you prepared for possible scenarios?

The sum of the preventive measures should be able to provide you with information so that you can consider additional measures that are important to safeguard your product.

It's about knowing the supply chain, having a good relationship and conducting regular checks. The frequency should be at least annually as well as after events.

Herbs and spices are one of the most complex and challenging area to analyse.

Analytical testing can be used to verify that preventive measures are effective and can help uncover problems, but this should not be the only control point. Analytical testing can be used as a first step. It is important to consider inspection programs, the preparation of a test strategy and sampling methods. It is the individual company's experience and internal control in general, e.g. knowledge about suppliers, etc., that shows how robust their system is and which measures are necessary for them to have control.

² [1UK Guidance herbs and Spices](#), Typical Harvest Chart in Annex III.

From Producer to Consumer

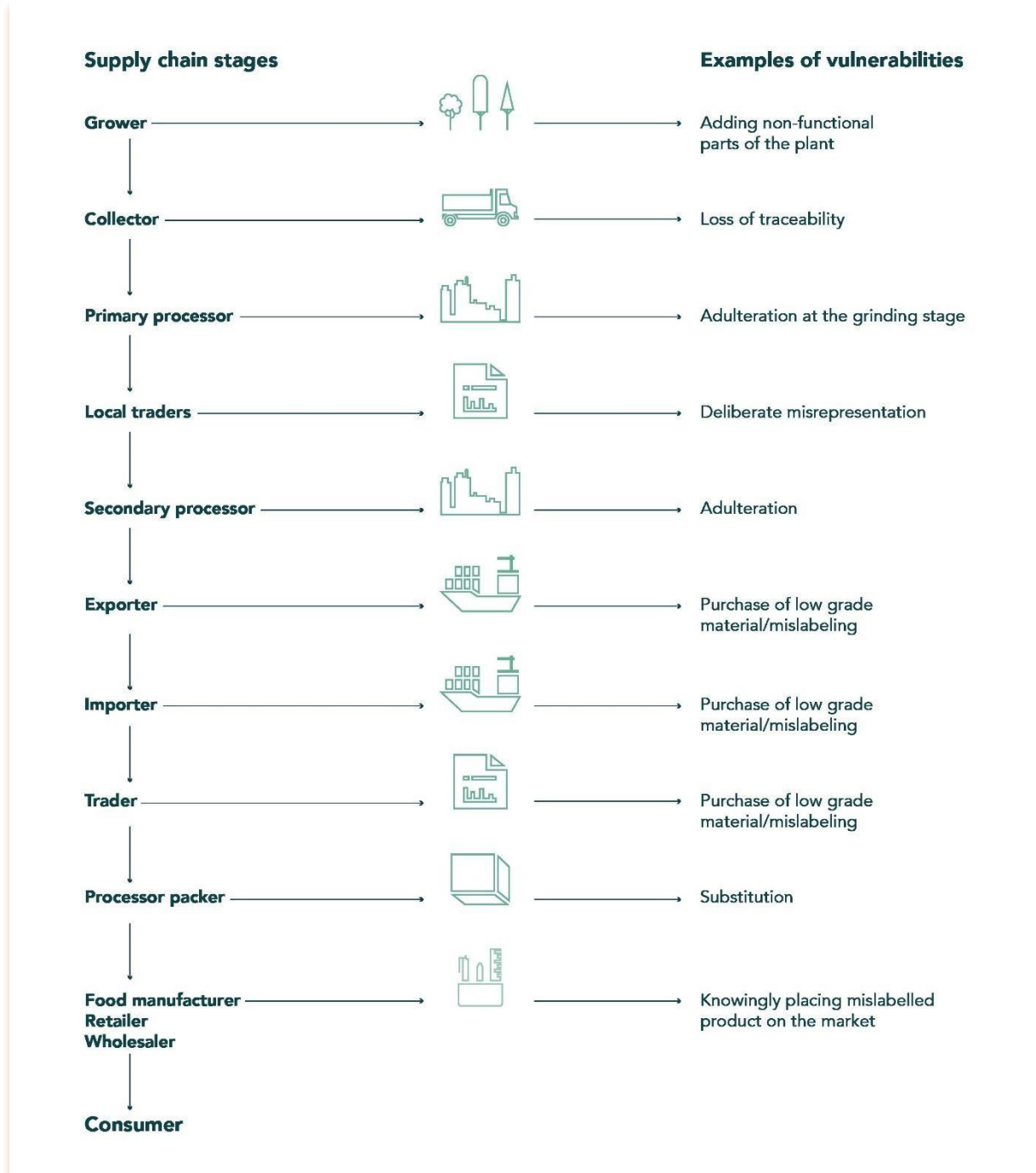


Figure 2. Generic map of supply chains for herbs and spices with examples of fraud vulnerabilities.
Source [UK Guidance Herbs and Spices](#)

6. Sampling and inspection programmes

Sampling and inspection programmes should obtain information and knowledge from supply chain quality assurance activities as well as known vulnerabilities and Horizon scan activities.

The establishment should use a recognised statistical sampling and inspection method suitable for the substance being tested/inspected, appropriate to the purpose and used consistently to ensure that the sampling is representative of the batch. You can find more information about testing in chapter 5.

It is important that your business is aware of the purpose of testing and what information you want to obtain, as this will help you understand whether testing is necessary, develop an appropriate testing strategy and choose a test that can meet your requirements.

The following factors should be considered when choosing an appropriate test method:

- The type of material to be tested and how to select the sample
- The appropriateness of the available testing methods, including the limitations of the Methods.

If possible, look for methods that are frequently used and possibly harmonised with other standards, see more information at ESA [European Spice Association](#).

The type of material being tested can have a significant effect on the detection ability, and the ability to accurately quantify the substance in question. Herbs and spices are one of the most complex and challenging products to analyse. They may, for example, be strongly coloured and may contain other ingredients/fillers that should not be in the product. These challenges are even greater with blending products, which can also lead to other chemical changes. It also applies to compound products containing herbs and spices due to the added complexity it adds to the product. There will be cases where there are currently no suitable and accurate testing methods for the herb or spice in question and the safety focus will therefore be on preventive measures.

Trust, but verify!

An assessment of the authenticity of a spice is both to determine whether the spice is what it claims to be, and whether there are other ingredients present:

How pure is the product?

Even if you have a supplier, you know and trust, it is important to establish a system of control, which is in proportion to the number of imports and types of spices.

The use of laboratory analyses can sometimes be the start of the control - and supplement the traceability control. Using multiple methods on the same product can provide a better basis for detecting and quantifying deviations.

Basic questions:

- Do you take samples of each shipment to ensure it meets the agreed specifications?
- Have you considered which of the following should be fulfilled: ISO, ESA or other criteria?
- Do you establish procedures to handle material that does not meet the agreed specifications and/or is not legal?
- Are your suppliers bound by a specification or contract, so that you are notified before they consider switching suppliers?

- Do you have an overview of alternative suppliers or suppliers that may be on standby?
- Do you update vulnerability checks, specifications and verification plans regularly, or only when changes occur?

Important checkpoints:

- Is the product traceable to a country of origin?
- Horizon scanning - is to be on the lookout for early signs of potentially important developments.
 - Collection of information on trends in food production
 - Be able to predict events that could increase the likelihood of fraud
- Verification documents - (analysis documents, certificates, Co A (analysis certificate) etc. ...)
- Audit programs - questionnaires, physical, third party - sampling and test schedule.
- Are the reception procedures updated with food fraud checkpoints? Examples:
 - Have you checked that the product is the same as the former product? Do you have a reference sample?
 - Material and packing slip - have you received what was ordered and match the data sheet/product specification for this product?
 - Do you have pictures of the label or product so you can compare?
 - If there is a new label - have you checked that it is the same product? Or if there are changes to the supply chain, e.g. from another factory?
 - Have you considered how often you should do/perform random tests?

Procedures in case of non-compliance:

It is important to have procedures established to handle all material that does not meet the agreed specifications and/or is not compliant with the law.

You need to know what to do with the issues/problems, is it serious?

- Do You have a deviation procedure or a plan of action?
- Should you notify the Food Safety Authority? [Be aware of food or drink](#)
- Do You have an emergency plan?
- Do you know the criteria to be met - ISO, ESA or others?
 - ESA list "Culinary Herbs and Spices"
[ISO/TC.https://www.fdf.org.uk/globalassets/resources/publications/guidance-herbsandspices.pdf](https://www.fdf.org.uk/globalassets/resources/publications/guidance-herbsandspices.pdf)

Procedures by exception:

It is important to establish procedures/guidelines for handling non-compliant products, as well as for the approval, monitoring and risk assessment of suppliers and supply chain. This makes it easier for businesses to make wise and thoughtful decisions when a problem arises, and change becomes necessary at short notice. Procedures for changing suppliers? What are your requirements, which questions do you ask your supplier? Which routines do you have when buying in small quantities?

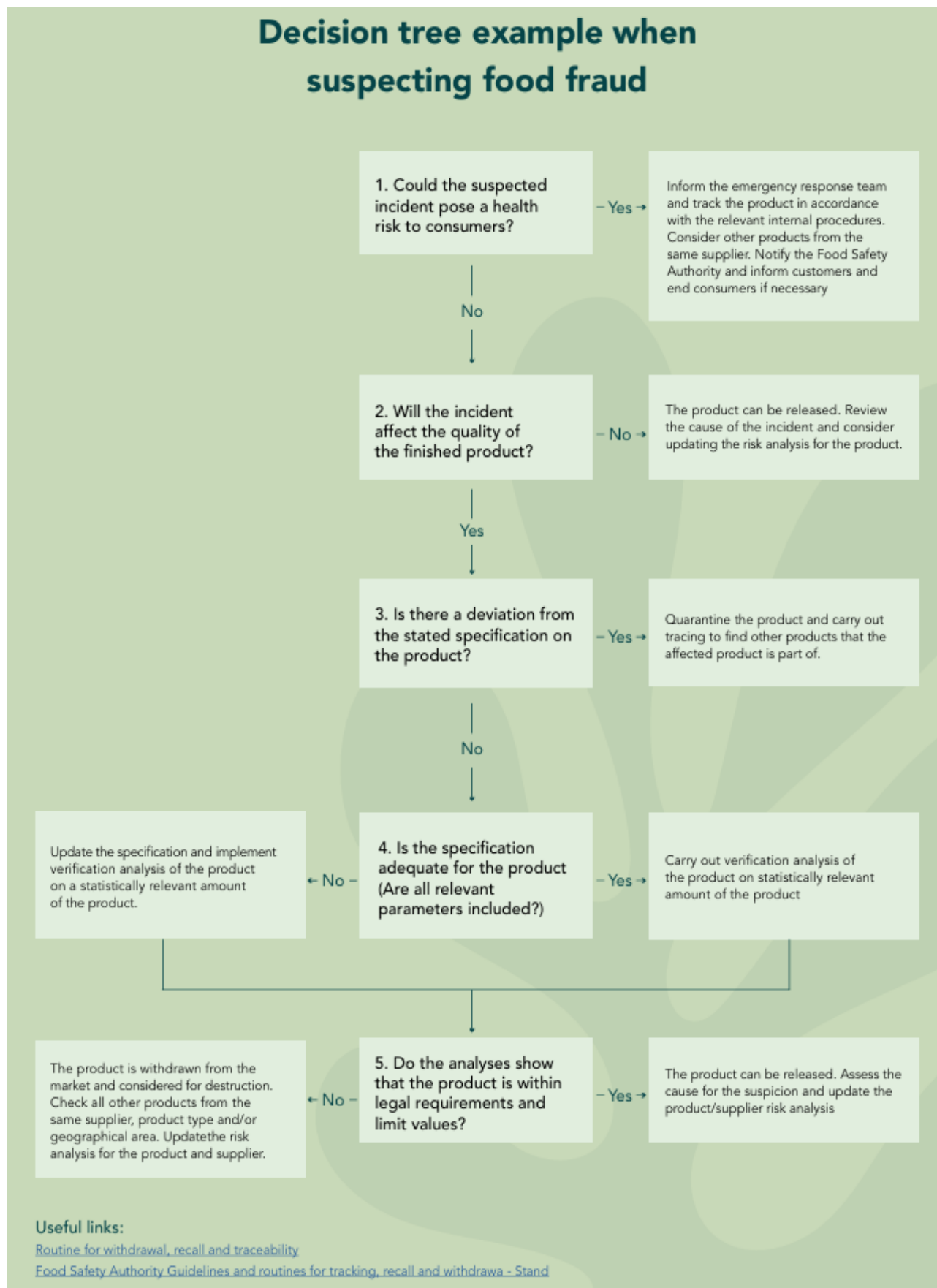


Figure.3. Decision tree example when suspecting Food Fraud.

7. Preparation of test strategy and selection of test methods

Fraud methods are often ahead of the development of accredited analyses, but there are various analytical tools that can be used to detect possible fraud, depending on the type of spice and herb.

The authenticity and purity of herbs and spices will be assessed in relation to relevant ISO standards and the provisions on foreign material and total ash form the basis for assessing the purity of herbs and spices.

It is important that you are aware of why you should test samples with analysis

- Is it because you suspect that a product relates to fraud?
- Or is it just checking out your product as part of the quality control?

Depending on the type of spices and herbs, there are various analysis tools available, which can be used to detect possible fraud.

The most common forms of fraudulent practices on herbs and spices are according to the JRC (Joint Research Centre (JRC))³

- Substitution of herbs with other botanical species
- Increase weight and volume by adding fillers
- Improvement of colour using an unauthorised additive
- Mislabelling of geographical origin and/or botanical species
- False declaration as Organic Product
- Use of an unauthorised or undeclared process as a disinfectant

https://food.ec.europa.eu/safety/eu-agri-food-fraud-network/eu-coordinated-actions/herbs-and-Spices-2019-2021_en

In order to detect fraud, different types of methods and analyses can be performed. In terms of spices, the European Spice Association has a recommendation regarding quality criteria for herbs and spices.

Typical analyses are:

- Ash and acid soluble ash
- Humidity and water activity
- Volatile Oil/Etheric Oil
- Bulk density
- Purity, including foreign/matter and botanical species.
- Foreign Matter
- Infestation

These analyses must be carried out in accordance with applicable legislation and standards (e.g. ISO). Check the European Spice Association Quality Minima Document for further recommendations.

<https://www.esa-spices.org/download/esa-qmd-rev-5-update-as-per-esa-tc-26-03-18.pdf>

Typical analysis to detect fraud is standard chemical analysis: Analysis of ash, soluble ash and volatile oil is the standard test for herbal quality and check for possible fraud. The analysis is carried out according to international standards. Analysis of illicit dyes/dyes is also carried out in accordance with international standards

o ³ [JRC Publications Repository - Fighting fraudulent and deceptive practices in the agri-food chain](#)

Foreign material and foreign substances

Foreign material and foreign substances can be checked by visual inspection and/or microscope. The analysis is carried out according to standards.

Example of analytical methods. For the analysis of botanical species, several methods can be used.

Visual inspection with a microscope. The inspection must be carried out in accordance with the regulations of a specialist in plant physiology and with the use of external reference material.

Spectroscopic techniques can be used. Typical FT-IR (Fourier Transform Infrared Spectroscopy) is a useful tool for detecting fraud in specific herbs. The technique is well known but check if it is standardised.

NMR (nuclear magnetic resonance) is another spectroscopic technique that can be used for fingerprint analysis. The technique is well known but check if it is standardised.

DNA analysis is a useful tool for obtaining information on the detection of other botanical species in the sample. With this technique, it is possible to quantify the amount of different DNA in the sample, but maybe not the exact weight amount of the different plant material. Some DNA in the sample may be impossible to analyse.

What should you check before conducting an analysis?

- Find experienced networks, see information in Annex II.
- Consider contacting several laboratories.
- Define the analytical area, will the analysis identify what you are looking for?
- Consider targeted analysis.

Consider applying multiple analytical methods to each sample.

See information ⁴ [Herbs and spices \(2019-2021\)](#)

It is important that you are aware of the purpose of the test and what information you want. It will help you understand whether testing is necessary, to develop a suitable testing strategy and to choose a test that can meet your requirements.

Factors you should consider when choosing a suitable test method include:

- How the test is selected.
- How suitable the available test methods are, including what limitations they have.
- The type of material being tested (type of herb/spices) can have a significant effect on the ability to detect and, where applicable, quantify the substance in question accurately.

Dialogue with the laboratory is important. Check if the laboratory is accredited for the relevant analytical method(s); if accredited – check their accreditation certificate as well. If they are not accredited, this must be considered. The methods discussed are a selection, and new methods of detecting fraud are constantly being developed.

8. References

[UK Guidance herbs and spices](#), The UK Industry Best Practice on Assessing and Protecting Culinary Dried Herbs and Spices Harvest Charts and Origin: III Typical Harvest Charts (Major Products and Origin)

The result of the first EU survey on the authenticity of [EU CCP Herbs and spices \(2019-2021\)](#)

ESA [European Spice Association](#)

[JRC Publications Repository - Fighting fraudulent and deceptive practices in the agri-food chain](#)

9. Useful networks

[New JRC research helps expose food fraud - European Commission](#)

[EU månedsrapport - FFN monthly - European Commission](#)

[Detection and Quantification of Botanical Impurities in Commercial Oregano \(Origanum vulgare\)](#)

[Using Metabarcoding and Digital PCR - PubMed \(nih.gov\)](#)

GFSI på GFSI <https://mygfsi.com/>

[Fera Horizon Scan HorizonScan \(fera.co.uk\)](#)

Defra's independent Authenticity Methods Working Group (AMWG) [amwg-elliott-response.pdf](#)

[Food Fraud Mitigation Guidance | USP](#)

SSAFE ([SSAFE | Food Safety Across the Supply Chain \(ssafe-food.org\)](#))

"Spices, culinary herbs and condiments", [Standarder etter ISO/TC](#),

Codex Alimentarius [CODEXALIMENTARIUS](#)

[CODEXALIMENTARIUS FAO-WHO](#)

[Food Authenticity Network](#)

[Food chain ID Certification & Compliance Overview - FoodChain ID](#)

[Digicomply SGS Digicomply | All-in-one Food Safety & Regulatory Compliance software](#)

[Agroknow | Use AI to Prevent Food Recalls](#)

[Authenticate: Supply Chain Transparency Software \(authenticateis.com\)](#)

[Food fraud - FoodDrinkEurope: FoodDrinkEurope](#)

10. Glossary

The UK Industry Best Practice on Assessing and Protecting Culinary Dried Herbs and Spices [UK Guidance herbs and spices](#) provides the following indicative definitions:

Adulteration is the deliberate and intentional inclusion in herbs and spices of substances whose presence is not legally declared, is not permitted or is present in a form which might mislead or confuse the consumer, leading to an imitated food and/or a product of reduced value, as well as the deliberate and intentional removal of any valuable constituent from a spice or herb.

Forgery of spices is the deliberate and intentional inclusion of substances in herbs and spices whose presence is not legally declared, is not permitted or is present in a form that could mislead the consumer, leading to an imitated product and/or a product of reduced value, as well as the deliberate and intentional removal of valuable constituents from spices or herbs.

Foreign material in spices. Extraneous matter is the term used to describe the presence of plant parts that are not the required one, for example stems or seeds in a leaf product. The European Spice Association's (ESA) Quality Minima Document sets a maximum level of extraneous matter at 1% for spices and 2% for herbs. These levels can normally be achieved through a combination of Good Agricultural Practice followed by thorough physical cleaning (Good Manufacturing Practice).

Broker: Companies that purchase or "take title" to product for resale to manufacturers, other brokers, retailers or food service companies but not directly to the consumer. They take legal responsibility under General Food Law and are considered to be a Food Business Operator under the terms of General Food Law

Agents: Non-manufacturing service providers that trade between a manufacturer or broker but do not take title to the products. Such companies provide a range of services to facilitate the safe and legal trade of products.

Importers/Exporters Companies that facilitate the movement of products across national boundaries satisfying legal and customs requirements. Importers and exporters may also be agents and/or brokers

11. Relevant regulatory framework

Food Law [Regulation - 178/2002 - EN - EUR-Lex](#)

Food Information to Consumers Regulation:

[Regulation \(EU\) No 1169/2011 of the European Parliament and of the Council on food information for consumers](#)

Official Control Regulation (OCR) [Regulation - EU - 2017/625 - EN - EUR-Lex](#)



12. Food fraud and the authorities

Food fraud is a challenging field, and fraudsters often possess advanced knowledge and methods. Many forms of fraud are at the forefront of scientific developments and regulatory developments.

The EU has recognised the importance of combating fraudulent and misleading practices in the agricultural food chain. In 2017, it legislated regular risk-based checks, at appropriate frequency, to identify possible intentional violations of the rules on the agricultural food chain committed through fraudulent or misleading practices (Article 9(2) of Regulation (EU) 2017/625 of the European Parliament and of the Council).⁵

Detecting fraud requires good knowledge of the sector, the fraud risk and the way fraudsters operate. Fraud is driven by opportunities and motivation, which are the most important factors to consider

Countermeasures put in place by industry and the competent authorities act as a strong “guard” and reduce the level of opportunity.

- **Motivation:** factors that lead to unethical behaviour (incentive). In many cases, this is a temptation related to economic gain or economic pressure, but non-economic aspects including political and social factors should not be excluded.
- **Possibility:** a set of circumstances that allow the scammer to commit fraud and that reduce the chances that fraudulent or misleading practice has negative consequences for the scammer that outweighs the potential benefits of the behaviour.
- **Preventive measures:** fraud prevention measures (own control systems, fraud vulnerability assessments, etc.) implemented by the manufacturers and control schemes of the competent authorities.

EU legislation does not contain specific provisions for authenticity and purity of herbs and spices. The requirements of the **Food Law and Food Information to consumers have requirements regarding protecting consumer interests. Food Law (Article 8)⁶ apply:** “protecting consumer interests and providing consumers with a basis for making well-founded choices with regard to the foodstuffs they consume”. The **Food Information Regulation (Article 7)** :“food information shall not be misleading, in particular as to the characteristics of the food, in particular the nature, identity, characteristics, composition, quantity, durability, country of origin or place of origin, and the mode of manufacture or production...”⁷

⁵ Regulation (EU) 2017/625 of the European Parliament of the Council of 15 March 2017 on official controls

⁷ Food Information to Consumers Regulation: Regulation (EU) No 1169/2011 of the European Parliament and of the Council on food information for consumers

⁶ Food Law Regulation - 178/2002 - EN - EUR-Lex

12.1 What is expected from the food authorities?

Some examples

- Focus on knowledge of new control methods to uncover food fraud.
- Increase cooperation with other countries and bodies and participate in national and international initiatives.
- Exchange information within the AAC system (Administrative Assistance and Cooperation), through the EU Food Fraud Network and other relevant international networks.
- Training and supervision.
- Guide the businesses.
- Dialogue with the industry on fraud prevention.

Safe Food

Food Law's requirement to ensure safe food means to have control, which means to have knowledge of the vulnerabilities. When inspecting and auditing food businesses, the basic question will be:

How well has the company protected itself from food fraud? Auditors/inspectors are not criminal investigators, but shall:

- Ask open questions to reveal weaknesses.
- Guide the companies to focus on improving areas where the weaknesses are uncovered.

How the verification is carried out will depend on whether the Company is certified or not in accordance with one or more standards. The following websites provide more information about the work of fraud within the EU and how fraud control can be carried out:

Joint Research Centre [Fighting fraudulent and deceptive practices in the agri-food chain \(JRC\)](#), **EU Agri-Food Fraud Network, [FFN](#),**

[Food Fraud and Quality \(europa.eu\)](#) The Knowledge Centre for Food Fraud and Quality (KC-FFQ) produce and makes sense of scientific information to protect the authenticity and quality of food in the EU

Example 1. [Prepare for an inspection focusing on authenticity.](#)

Is the company aware of the dangers of being defrauded and has established a system and strategy appropriate for this purpose, as part of the overall management system?

In all types of inspections, a basic question will be how the Company act to protect the company for not becoming a victim of fraud. Examples of questions can be found in Figure 1 and Figure 2, which can help the inspectors during the preparation and execution of the inspection.

The report from the EU's Joint Research Centre (JRC) has good guidance on how to carry out supervision in accordance with article 9.2. Technical Report Implementation of Article 9(2) of Regulation (EU) 2017/625.

See in particular, chapter 3 in [Fighting fraudulent and deceptive practices in the agri-food chain \(JRC\)](#).

There are various certification schemes/and standards

Examples: **Approved quality standard, GFSI** <https://mygfsi.com/>. ISO and BRC standards can be part of this.

If the company is certified according to one or more quality and/or management system standards, one can ask for the latest findings from the audit carried out by the certification company and what the entity has done to prevent any discrepancies from occurring again.

If the company is not certified, ask for the results of the last internal audit, how the company has taken action if non-conformities have been uncovered with regard to authenticity to prevent deviations from occurring again. What measures are the company's responsibility, the focus is whether measures have been implemented and that the focus on the nonconformity is maintained.

Examples on supplementary questions:

- Does your company have updated product specifications for each product they sell?
- How does the company check sub-suppliers? See fig.1 and fig.2.
- Does the company know all its suppliers and the supply chain of its subcontractors?

Example 2. Preparation for sampling on authenticity

It will be useful to read through the report and use of methods from the EU project that the Norwegian Food Safety Authority was part of: [Herbs and Spices \(2019-2021\)](#). See also part 6 regarding test strategy and selection of test methods and laboratories.

In preparation for the basic questions of origin and supplier country of various spices, the overview in the British guide will be useful, see information: [Guidance on authenticity of herbs and Spices, Overview of the latest factor with influence on the harvest, see Appendix III Typical Harvest Charts \(Major Products and Origin\)](#).

Sometimes analytical testing is the only possibility of detecting a substitution, or as a start to monitoring control, but it should not be used as the sole control point.

Example 3. Communication about findings on authenticity

When the company itself, or the authority's control, has uncovered nonconformities on authenticity, use this guide as a source of information.

See examples in:

- Figure 1. Product - supply chain - Prevention - Examples of control points
- Figure 2. Generic map of supply chains for herbs and spices with examples of vulnerabilities to Fraud

From these, it is possible to ask open basic questions

- to get an overview of how the company work regarding the authenticity of its products.
- In case of suspicious deviations with regard to authenticity, this requires further control of analytical data as well as document/traceability checks.
- Consider a meeting with the laboratory to get more details from the analysis results before you follow up on your business.

12.2 About International Cooperation

Good cross-border communication about suspected or uncovered non-conformities on authenticity is important.

Each part of the supply chain has a role to play when it comes to ensuring product authenticity, whether as a producer, primary processors, agents, brokers, retailer, wholesalers or food producers.

It is important that the companies respect legal requirements and responsibilities within the market in which they trade.

It is important that the food safety authorities focus on dried herbs and spices and authenticity in the controls they carry out.

When using the EU's reporting systems in the event of suspected/or uncovered fraud, this may support coordination of activities and improve communication and cooperation between countries, and between different authorities internally in each country.

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**Together we safeguard the future for people,
animals and nature**

