

Food Fraud

Food Fraud is being talked about everywhere, at the latest since Version 6.1 of IFS Food was published in late 2017. But what exactly is Food Fraud and what needs doing now? This article gives an overview.

+ What is Food Fraud?

Translated literally, it involves food adulteration, and means the intentional influencing of foodstuffs for economic gain.

The IFS (International Featured Standard), for example, defines Food Fraud as *deliberate, intentional substitution, false labelling, counterfeiting or falsifying foods, raw materials, ingredients or packaging brought onto the market in order to obtain economic benefit. This definition also applies to outsourced processes.*

Why Food Fraud?

Many food safety standards, e.g. BRC (British Retail Consortium), IFS and FSSC (Food Safety System Certification) 22000, are based on the specifications of the international GFSI institution (Global Food Safety Initiative). Of these, the so-called GFSI Guidance Documents define specifications that a Standard must implement in order to be recognized by the GFSI. Cases of food adulteration that occurred in the past have led to Food Fraud becoming a component of the GFSI Guidance Document since Version 7.

How is the potential for Food Fraud recognized?

Systematic research is needed to recognize the opportunities for adulteration that exist and must be taken into account. In this respect, one should try to adopt a criminal's viewpoint as far as possible and should consider where one can practice adulteration and falsify products easily and effectively, and with the biggest possible profit.

1. Form a Food Fraud Team

The research should be carried out by a multidisciplinary team (e.g. Purchasing, Quality Assurance, Marketing) to obtain a comprehensive view of the possible potentials.

2. Collect informations

The following are the minimum that should be taken into account in this respect:

A. Which cases of adulteration have occurred/become known about in relation to products and ingredients in the past?

An overview of adulteration cases that have already occurred will simplify an introduction to the topic and heighten the awareness of potentials for food fraud. Various web sites provide information on the subject, and here is a selection:

Monthly summary of food fraud reports by the EU <https://ec.europa.eu/jrc/en/research-topic/food-authenticity-and-quality>

Reports in the EU's fast warning system (Filter in Hazard for adulteration/fraud) <https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm>

The Food Fraud Data Base (chargeable) www.foodfraud.org

The Data Base based on the RASFF (the EU's Rapid Alert System for Food and Feed reports) together with other information (chargeable) www.safefood-online.de

The EU Authorities Network – not publicly accessible

Including annual reports – publicly accessible

https://ec.europa.eu/food/safety/food-fraud/reports_en//ec.europa.eu/food/safety/food-fraud/aas_en

B. What claims are made in relation to the products and ingredients, e.g. specific ingredients, properties or origin, such as variety, country/region, organic, halal, kosher etc.?

The emphasizing of particular ingredients whose origin or properties offer opportunities for adulteration. One should therefore obtain an overview of the emphases that are used and should assess which of them offer potential for fraud.

C. Which raw materials/ingredients are vulnerable to fraud?

Based on a listing, all the materials (raw materials/ingredients/packaging) should be evaluated with regard to their value, origin/countries of origin, availability, properties (liquid, granular ...) etc., to allow the potential for adulteration to be estimated.

D. Which raw material sources or suppliers are vulnerable to fraud?

Here again, the aim is to obtain an overview of the raw materials sources used, and to evaluate their potential for fraud. Countries of origin and cultural criteria are certainly of primary importance in this respect.

3. Carry out risk analysis – Food Fraud Vulnerability Assessment

3.1 With regard to: Materials, Outsourced processes, Suppliers
An essential building block when dealing with Food Fraud is a documented plan to reduce food fraud. This starts with a risk analysis, which in this case is called a Food Fraud Vulnerability Assessment or vulnerability analysis. It should contain a recognition of the risks of possible food fraud activities within the entire supply chain. This risk analysis should encompass all the materials (raw materials, ingredients, foodstuffs, packaging materials), all the outsourced processes and all the suppliers.

3.2 Define criteria

The construction of a risk analysis and the risk assessment process can differ greatly, but they should take into account at least the following criteria:

- + Which food fraud cases have already occurred in the past?
- + Economic factors of the materials, suppliers and service providers
- + What is the vulnerability to food fraud due to the properties of the materials?

- + Which control measures to discover food fraud have already been introduced?
- + What is the relationship of trust like, and what experience is there with the suppliers?

3.3 Assess risks

The risk evaluation based on these criteria could take place as follows:

O = Possibility or probability of occurrence – how easy is it to adulterate or counterfeit (undiscovered) – i.e. to commit fraud?
 D = Probability of discovery – how easy is it to discover a fraud?

Occurrence	high	3	6	9
	medium	2	4	6
	low	1	2	3
		high	medium	low
		Discovery		

++ Possibility of risk assessment of materials, outsourced processes, service providers and suppliers

1	very high trust
2	high trust
3	medium trust
4	low trust
5	very low trust

++ Possibility of risk assessment of service providers and suppliers

4. Plan risk reduction – Food Fraud Mitigation Plan

After the dangers have been identified and assessed with regard to their risks, the task is now to confront the risks and to define how to handle them. This takes place in what is known as the Mitigation Plan, i.e. the risk reduction plan. This means that measures/suitable controls must be defined for the high risk dangers (i.e. the risk areas highlighted in red above) to reduce them and/or to uncover possible instances of fraud. These can take very different forms, e.g.:

- + Carrying out own analyses
- + Analysis certificates from raw materials suppliers containing prescribed tests to prove the authenticity of the material
- + Carrying out audits of upstream suppliers, service providers etc.
- + Carrying out mass balance tests
- + Using tamper-evident devices, e.g. seals
- + Checking/verifying that suppliers, dealers, service providers etc. are registered as food business operators with the relevant authorities
- + Switching over to ingredients or suppliers with a lower risk

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- + Switching over from ingredients or suppliers from high-risk countries of origin to countries of origin with a lower risk
- + Shortening the supply chain, e.g. by procuring directly from the producer
- + Changing the purchasing policy (e.g. avoidance of auctions or spot markets with which the traceability of ingredients is more difficult to establish).

The biggest challenge certainly lies in this step, because a possibility of reducing it at an appropriate cost does not always exist for every risk that is recognized. However, if this is taken into account in the criteria for the hazard analysis and/or risk assessment, it should be possible to avoid this problem area.

5. System updating
 Regular updating?

The Food Fraud System must be kept up to date constantly, or regularly updated. I.e. when the following events occur, for example:

- + Falsification is evidenced/proved by the monitoring precautions defined in the Mitigation Plan
- + Emergence of a new risk (e.g. publication of information about the falsification of an ingredient)
- + A change in the availability of materials
- + (Large) fluctuations in materials prices
- + A change in the management of a supplier/service provider
- + Changes in the supplier/service provider's financial situation
- + New raw materials/materials and/or suppliers/service providers
- + Changes, for example in the country of origin of materials

If no such things have occurred, the system must be checked at least annually to ensure it is up to date.

Sources

- Food Fraud – Food fraud in an age of globalization, Prof. Dr. Ulrich Nöhle, Behr's Verlag, 1st revised reprint 2017
 - BRC – British Retail Consortium, Global Standard Food Safety Issue 7 – Understanding Vulnerability Assessment, London, 2015
 - IFS – International Featured Standards, Food Standard, Version 6.1, IFS Management GmbH Berlin, November/2017
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