

# HOW TO FIGHT AGAINST FOOD FRAUD?



Food fraud has always been a problem but this subject is ever more present in the news since the horse meat scandal in Europe where beef was replaced by horse meat. Closer to home, an Ontario company has been ordered by the Canadian Food Inspection Agency to pay 1.5 million dollars for selling, between 2011 and 2013, Mexican tomatoes and other vegetables labelled as “Product of Canada”.

These events helped to publicize the problem of food fraud at the level of both the industry and government agencies. The sets of schemes recognized by the *Global Food Safety Initiative* (GFSI) have already included measures to mitigate such risks. The standard of the British Retail Consortium (BRC) has already added these concepts since January 2015. The recent versions of the Safe Quality Food (SQF) and the Food Safety System Certification 22000 (FSSC 22000) schemes published in 2017, have also included clauses on this subject. So how can the industry introduce its own program to reduce the risk of food fraud?

## WHAT IS FOOD FRAUD?

Food fraud is the substitution, dilution or intentional addition of a food product to obtain a financial gain by increasing the apparent value of a product or by reducing its production cost. It can be as easy as deceptive labelling.

The most affected food or food categories are olive oil, fish and seafood products, honey, maple syrup, some fruit juices, meat products, spices, coffee, tea and organic products.

## FOOD FRAUD ISSUES

Companies must face this risk and set up means to protect consumers, their reputation and trademarks. While the primary intent of food fraud is financial gain, it can cause food safety problems. For example, the Chinese incident in 2008 where powdered milk was contaminated with melamine. Melamine was added to falsely boost protein content but there was a serious impact on public health.

The number of cases found over the past few years is increasing. Many factors have contributed to the rise in fraud such as the length and complexity of the supply chain, the concentration of groups of retailers and purchasers with purchasing power thereby exercising pressure to reduce costs. On the other hand, analytical methods have been devised to detect fraudulent food products.

Current quality assurance programs usually concentrate on quality and food safety and the controls focus on known contaminants. Food Defense programs deal with intentional contamination. Food fraud is more difficult to uncover and the quality assurance systems are not always designed to detect the substituted food products.

## HOW TO ADDRESS A VULNERABILITY ANALYSIS?

By researching and evaluating the potential risks for fraud.

The vulnerability analysis can be performed on an ingredient or ingredient category.

The first step is to gather all the required information on raw materials, suppliers and distributor chain. The ingredients are then evaluated taking into account the factors related to food fraud risks. These factors include:

- Nature of the ingredient;
- History;
- Economic factors;
- Geopolitic factors;
- Availability of raw materials;
- Available analyses to detect a fraud.



Certain types of ingredients are more susceptible to fraud due to their physical state. For example, grinding a spice makes the dilution harder to detect.

Certain types of ingredients are more susceptible to fraud than others due to their physical state. For example, dilution will be more difficult to detect when a spice is ground.

Certain ingredients have a well-known history of fraud. There are organizations that track instances of fraud to help companies determine the vulnerability of their ingredient on an historical basis. For example, the USP (US Pharmacopeial Convention), NCFPD (National Center for Food Protection and Defense) and European Union Rapid Alert System databases can be used to evaluate the historical factor.

Available analyses are also a factor to consider when evaluating risks. A Brix analysis of maple syrup can determine if the product has been diluted but, it will not detect a substitution by another sweetener. The risk is generally less severe when the available analyses are specific and readily available.

This simply means that each ingredient can be evaluated against a list of factors. A proper tool to conduct a vulnerability analysis could be an assessment matrix where a score is given to each parameter. The results are then used to determine which ingredients are more at risk and to set up a monitoring plan.

## IMPLEMENTING A MONITORING PROGRAM

Varied means can be used to fight food fraud. Key elements include creating a supplier qualification program, maintain a good relationship with them and design a raw material sampling plan.

The vulnerability analysis can identify possible types of fraud in relation to raw materials. Using this information it is then possible to formulate a sampling plan based on the risk. The analytical methods must target parameters that guaranty or confirm that the ingredients are authentic.

DNA analysis based on the polymerase chain reaction (PCR) or enzyme-linked immunosorbent assay (ELISA) can be used to identify species for example, when a species of greater value is substituted or diluted by a less expensive species. The PCR methods can also detect the presence of genetically modified organisms (GMO) in organically labelled foods.

The vulnerability analysis and monitoring program must be dynamic. They must be updated on a regular basis to take in new threats, market changes, new analytical methods and recent fraud cases. Remember that the techniques used by fraudsters are constantly evolving!



### **Eurofins Environex at your Service!**

Eurofins Environex specialists can advise you on your vulnerability analysis and the development of your monitoring program to counter food fraud. Specialized equipment is also available to analyze your food products.

For any question regarding the available services:

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