



GROUP
EnvironeX

Symbol of Quality of Life

ENVIRONMENT

HEALTH AND PHARMACEUTICAL

AGRIFOOD

Food Fraud: A current issue for the agrifood industry

Québec Longueuil Saguenay Sherbrooke

Subjects of presentation

- What is Food Fraud?
- It's Complexity
- How to Manage Risk?
- Future Outlooks
- Help provided by Environex Group



What is Food Fraud?

THE SCANDAL CREATED BY HORSE MEAT IN FAST FROZEN FOOD

20% BEEF
80% HORSE

100% PIGEON



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.



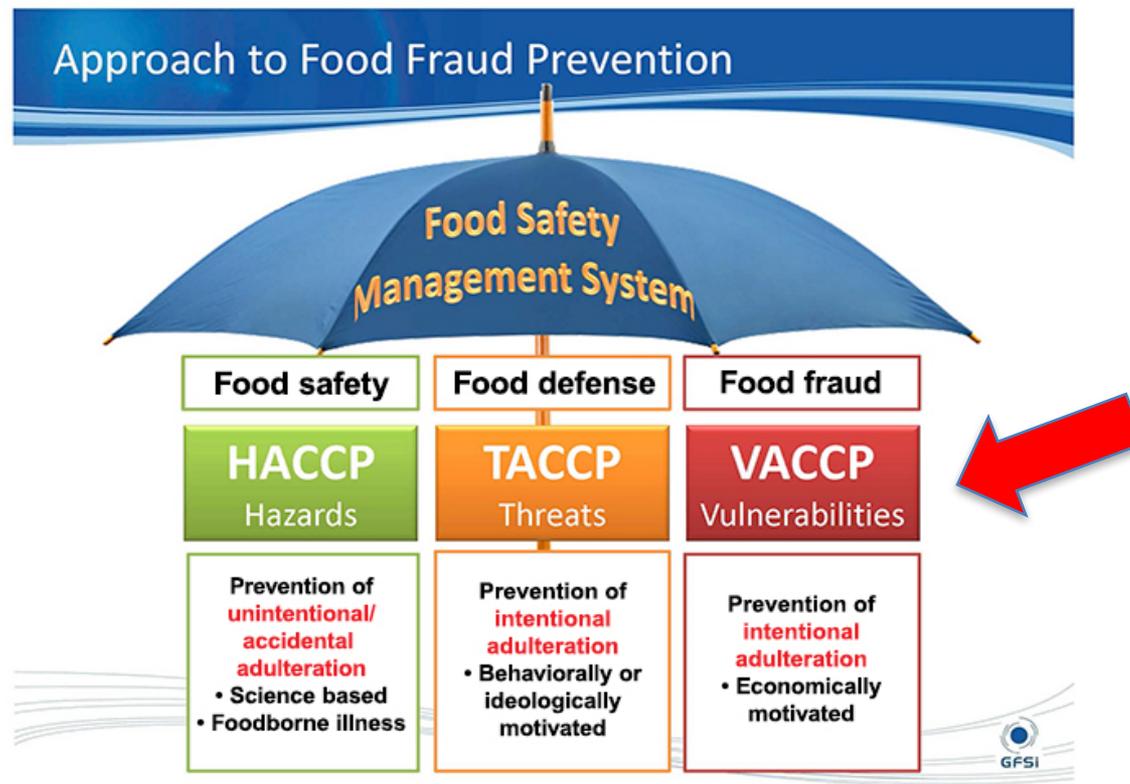
What is Food Fraud?

- **Foods that are more affected:**
 - Olive oil
 - Fish and sea food products
 - Honey
 - Maple syrup
 - Fruit juices
 - Meat products
 - Spices
 - Coffee
 - Tea
 - Cacao



What is Food Fraud?

According to the GFSI (Global Food Safety Initiative)

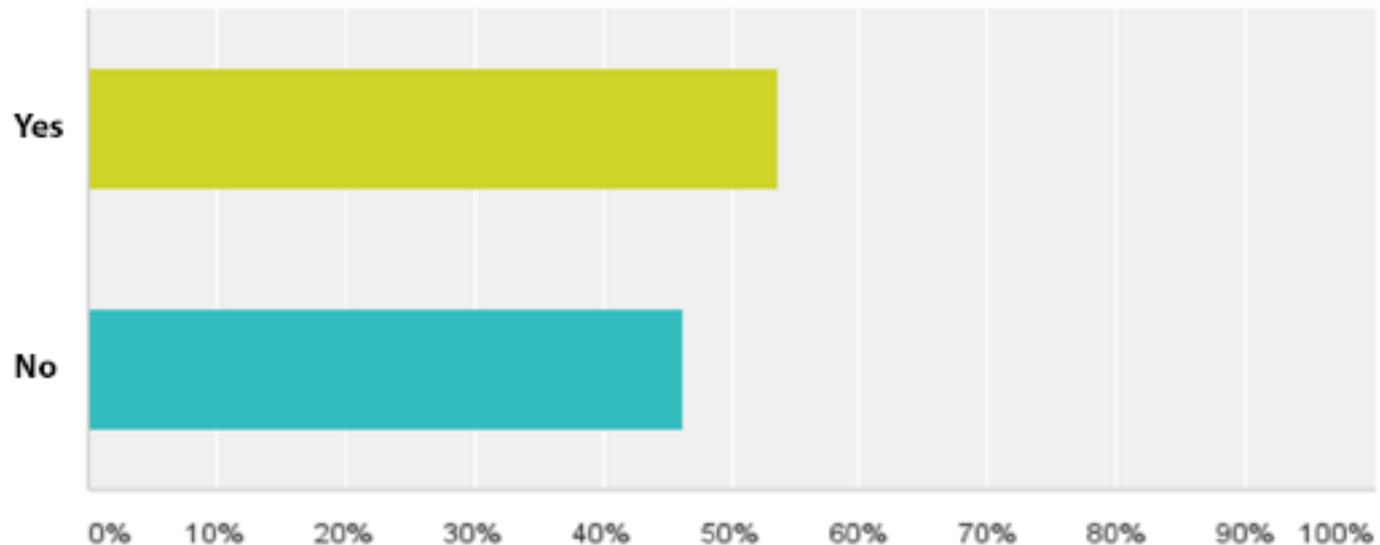


The Complexity of Food Fraud

Results of a survey conducted by Environex Group

Q10 Are you aware of the new requirements concerning the issue of food fraud and the means to counter it?

Answers obtained: 41 Question ignored: 14



The Complexity of Food Fraud

An example would be spices in the context of globalization



- They are a very small part of our diet but have a major impact on international commerce.
- The distribution cycle of a spice sold in North America passes through numerous stakeholders located in various countries.
- This type of commerce involves a large number of middlemen which means there are opportunities for fraudsters.
- The complexity of processed food and the fact that many ingredients come from different countries contribute to making the food chain more complex.

How to Manage Risk?

Regulatory and Certification Requirements

- Companies certified under the BRC (British Retail Consortium) must evaluate the vulnerability of their raw materials and implement monitoring programs.
- FSSC 22000 (Food Safety System Certification) and the SQF (Safe Quality Food Institute) will add fraud to their requirements.
- The US Food Safety Modernization Act (FSMA) refers to food fraud which includes economically motivated adulteration.



How to Manage Risk?

Vulnerability Analysis

- Evaluate ingredients while taking into account factors influencing the risks of fraud:
 - ✓ Nature of the ingredient
 - ✓ History
 - ✓ Economic factors
 - ✓ Geopolitical factors
 - ✓ Availability of raw materials
 - ✓ Available analyses to detect fraud.
- Implement an ingredient monitoring program, depending on the risk.

How to Manage Risk?

Analysis Method:

- DNA analyses by means of PCR technology
- Chromatographie:
 - Sugar profiles
 - Fatty acids profiles
- Microscopic evaluations
- IRMS – Isotope Ratio Mass Spectroscopy
- Specific natural isotope splitting by means of nuclear magnetic resonance.



Future Outlooks

- Make vulnerability analyses part of the Quality Assurance Program.
- Continue to itemize fraud cases in the data bases to identify the ingredients at risk.
 - ✓ USP (US Pharmacopeial Convention), NCFPD (National Center for Food Protection and Defense), European Union Rapid Alert System
- Develop specific analytical methods to oppose fraudsters.

Help provided by Environex Group

- Groupe Environex specialists can advise you on food fraud:
 - Vulnerability analysis
 - Develop your monitoring program
 - Analysis performed with specialized equipment.
- Contact us:
infoagroalimentaire@labenvironex.com

Food Fraud:

A current issue for the agrifood industry

*Thank you for your
interest*

Marc Hamilton, microbiologist,
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