Food Fraud Requirements and Trends Food Safety Summit

Chicago Thursday, May 11, 2017 – 2:45 to 4:00pm

John Spink, PhD

https://youtu.be/EDESTUCMY88

Director & Assistant Professor, Food Fraud Initiative College of Veterinary Medicine/ Food Safety

<u>WWW.FoodFraud.MSU.edu</u> Twitter @FoodFraud and #FoodFraud



Curriculum 课程安排

预防食品欺诈概述 MOOC – Massive Open Online Course David <u>Massive Open Online Course (MOOC – free, open, online) 在线公开课(网课-</u> -免费、开

Food Fraud Prevention Overview

放、在线)

- Food Fraud Overview, Two Session Course, offered biannually in May and November <<< OPEN NOW – May 18 & 25
- 食品造假概览,两节课,
- **NEW** Food Fraud Audit Guide June 8 & 11

Executive Education/ Short Course: Food Fraud Management, Vulnerability Workshop

Graduate Courses (Online, Three Credits) 研究生课程(在线,3学分)

- Anti-Counterfeit & Product Protection (Food Fraud) 反食品造假及产品保护(食品造假)
- Quantifying Food Risk (including Food Fraud) 食品风险量化(包括食品造假)
- Global Food Safety (including Food Fraud) 全球食品安全(包括食品造假)
- Food Protection and Defense (Packaging Module)食品保护和防护(包装模块)
- Packaging for Food Safety 为食品安全做好包装工作
- **Certificate** (Online, Four Courses Each) 证书(在线,每人四节课)
- Certificate in Food Fraud Prevention (Food Safety)预防食品造假证书(食品安全)

<u>Master of Science in Food Safety (Online)</u> 食品安全理学硕士

网站:www.online.FoodSafety.msu.edu

(153) 国家食品安全风险评估中心

Goal: Full Compliance

- Scope
 - FSMA-PC
 - FSMA All
 - US Food Laws (Food, Drug & Cosmetics Act)
 - All US and International laws (Customs, tampering, Financial/ Sarbanes-Oxley)
 - All international food laws where needed (Codex, ISO).
 - Commercial Standards (GFSI and Standards)
 - Customer requirements
- Objective: Allowed to conduct business

The Food Risk Matrix

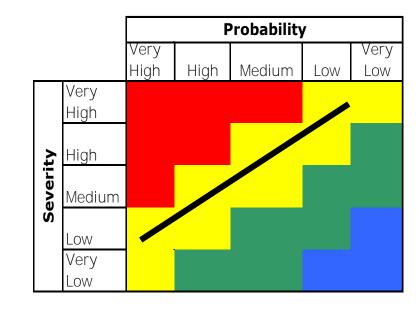
Prevent by Understanding the Motivation

Food Quality	Food Fraud	Motivation Gain: Economic
Food Safety	Food Defense	Harm: Public Health, Economic, or Terror
Unintentional	Intentional	
Action		

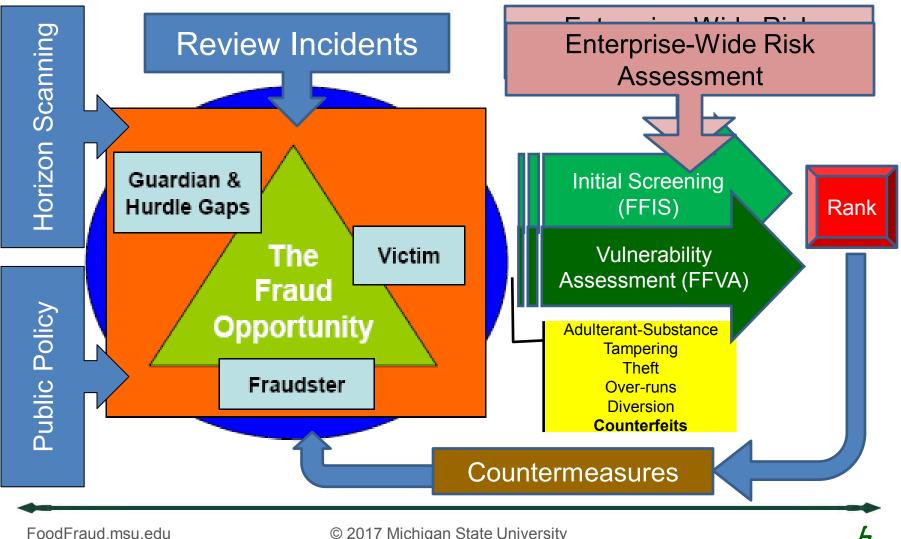
Source: Adapted from: Spink (2006), The Counterfeit Food and Beverage Threat, Association of Food and Drug Officials (AFDO), Annual Meeting 2006; Spink, J. & Moyer, DC (2011) Defining the Public Health Threat of Food Fraud, Journal of Food Science, November 2011

Brand- to Product-Protection Risk Analysis

- Risk Analysis
 - Risk Assessment
 - Hazard Identification
 - Risk Management
 - Risk Communication
- Risk Threshold
- Risk Mitigation



Food Fraud Prevention System



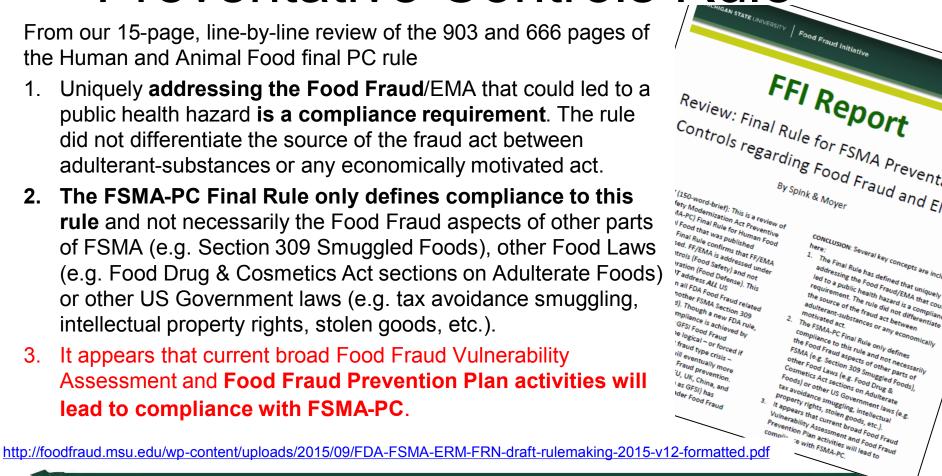
Inspection or **Investigation**

- Inspection (Compliance):
 - No active incident
 - Function: regulatory compliance, audit inspection
 - Convince an auditor or inspector that you meet the requirements
 - Q: Explain the process is in compliance
- Investigation (Prosecution):
 - Active incident: e.g. a baby just died
 - Function: Legal liability, criminal investigation
 - Present evidence to an investigator or prosecutor to prove no willful blindness or neglect
 - Q: Explain why this incident was NOT a "hazard that required a preventive control"

FSMA Food Fraud/ EMA **Preventative Controls Rule**

From our 15-page, line-by-line review of the 903 and 666 pages of the Human and Animal Food final PC rule

- 1. Uniquely addressing the Food Fraud/EMA that could led to a public health hazard is a compliance requirement. The rule did not differentiate the source of the fraud act between adulterant-substances or any economically motivated act.
- 2. The FSMA-PC Final Rule only defines compliance to this rule and not necessarily the Food Fraud aspects of other parts of FSMA (e.g. Section 309 Smuggled Foods), other Food Laws (e.g. Food Drug & Cosmetics Act sections on Adulterate Foods) or other US Government laws (e.g. tax avoidance smuggling, intellectual property rights, stolen goods, etc.).
- 3. It appears that current broad Food Fraud Vulnerability Assessment and Food Fraud Prevention Plan activities will lead to compliance with FSMA-PC.



Chapter 5

CHEMICAL, PHYSICAL AND ECONOMICALLY MOTIVATED FOOD SAFETY HAZARDS

Chapter 5B "Economically-Motivated Food Safety Hazards" (Food Fraud) Friday, July 15, 8:15 to 8:45am John Spink, PhD Director & Assistant Professor Food Fraud Initiative, Michigan State University SPINKJ@msu.edu www.FoodFraud.MSU.edu



Video Link (Minimal Version)



Video Link (Full Version)



https://youtu.be/nJYwoIZX9t 8

https://youtu.be/ZgMHhfSbve k

GFSI Issue 7 Published Food Fraud Terms

FSM AI 21 Food fraud vulnerability assessment

 The standard shall require that the organisation has a documented food fraud vulnerability assessment procedure in place to identify potential vulnerability and prioritise food fraud mitigation measures.

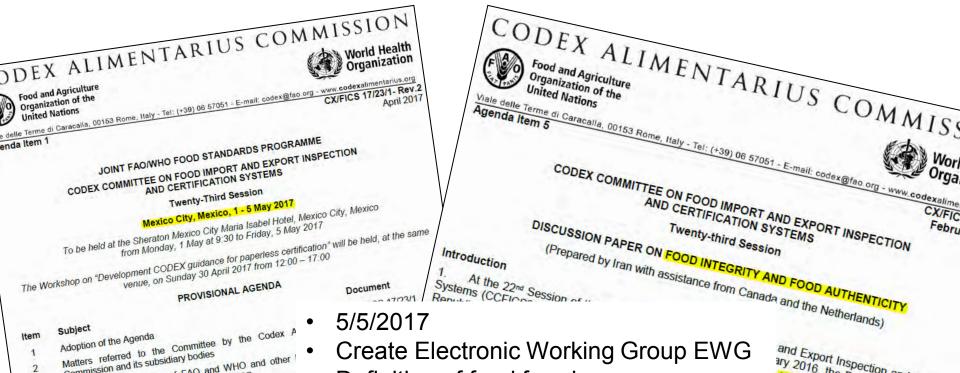
FSM AI 22.1 Food fraud mitigation plan

 The standard shall require that the organisation has a documented plan in place that specifies the measures the organisation has implemented to mitigate the public health risks from the identified food fraud vulnerabilities.

FSM AI 22.2 Food fraud mitigation plan

 The standard shall require that the organization's Food fraud mitigation plan shall cover the relevant GFSI scope and shall be supported by the organisation's Food Safety Management System.

Codex Alimentarius: Food Fraud



- Create Electronic Working Group EWG
- Definition of food fraud ۰
- Definition of adulterant/ adulteration ٠
- Gap analysis of current Codex texts
- Propose "Step 1 Project"

and Export Inspection and Certificati any 2016, the Delegation of the Islam authenticity of food and need for ne dramatic increase in food fraud a very difficult problem to tackle, but expressed their support for new work I fraud, where the analytical methods

Commission and its subsidiary bodies

National Food Control Systems

Information on activities of FAO and WHO and other

Draft Principles and Guidelines for Monitoring Per

Discussion paper on Food Integrity/Food Authenticity

Discussion paper on use of System Equivalence Discussion paper on the Use of Electronic Certificates

Organizations relevant to the Work of CCFICS

1

2

3

4

5

6

Compliance for Food Fraud

- FSMA Preventive Controls
 - Any "agent" that leads to a "hazard that requires a preventive control" including from an act that is "economically motivated"
 - "How did you defined this to NOT be a 'hazard that requires a preventive control?'
- GFSI (BRC, FSSC, etc.)
 - All fraud, All products, vulnerability assessment, prevention plan
- Sarbanes-Oxley (SOX or Sarbox)
 - Public company requirement but ERM for private companies
 - Manage or disclose ALL threats to revenue...
- Codex Alimentarius (World food code)
 - In-process, 5+ years to formal requirement
- **Conclusion:** Vulnerability Assessment for All fraud and All products

MSU Engagement 2017

	Outcome	Benefit	Commitment
Graduate Course	Share your knowledge and set direction of research	Plus Graduate Certificate in Food Fraud Prevention	14 Weeks, online, May to August, ~\$2600
Executive Education	Share your knowledge and set direction of research	Develop the internal talent to support initiatives in the AC space, meet other thought leaders ("invitation only" sessions for brand owners)	2 Days on-campus (\$1950) July 18-20/20-21 Sept 26-28/28-29*
Multi- Client Studies	Research the why's of AC/D, understand underlying drivers	Uncovering the drivers may lead to new strategies to combat Counterfeiting	Teleconference Meetings with option for on-campus e.g. Veterinary and Animal Product Fraud
MOOC	Engage global network of Food Fraud thinkers	Two, 2-hour on-line webinar format with assessment. Students earn an MSU "credential".	Mar 3 & Apr 6 (Audit Guide) May 18 & 25 Nov 7 & 14
FoodFraud.ms		2017 Michigan State University	

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- The Citadel: Dr. Roy Fenoff



Discussion

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Twitter: Food Fraud and #FoodFraud

www.FoodFraud.msu.edu

Videos on YouTube: Search "Food Fraud"





Food Crime Matters

The UK approach to serious dishonesty in food supply chains

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Andy Morling Head of Food Crime National Food Crime Unit London



@NFCULondon

The Daily Telegraph

Prable Neuron - 2013 Test

telegraph.co.uk

NUMBER 0120

Horse meat scandal 'breathtaking'

Beef products contaminated as a result of criminal activity may pose a risk to human health, MPs warn for first time

FOTEL

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Food crime (n)

Serious dishonesty that impacts detrimentally on the safety or the authenticity of food.







'Leading the fight against food crime.'







PREVENT Offender focussed crime prevention ('influence activity')

PROTECT Victim focussed crime prevention ('target hardening')

PREPARE Capability and capacity building

PURSUE Identifying and disrupting criminal activity

Disruption



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Prevention

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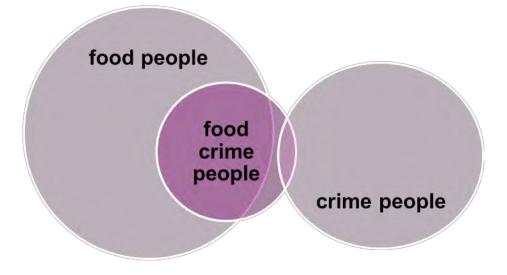
PURSUE Identifying and disrupting criminal activity

Disruption



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Prevention







Food criminal









Food crime challenges

Historically not considered 'real' crime

Industry collaboration

Few natural 'break-out points'

Very low levels of reporting/victim awareness

Complex response landscape

Establishing the norm



FOOD CRIME CONFIDENTIAL

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Thank you

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Food Fraud Management

Peter Begg Former Senior Director, Global Quality Mondelez International May, 2017

Discussion Topics

- Background information
- Strategy
- Forming Working groups
- Watch-Outs/Challenges
- Summary

Executive Summary

- GFSI now requires a specific Food Fraud vulnerability plan with version 7 of the Benchmarking Document, which was issued in March 2017
 - A systematic approach toward Food Fraud is relatively new to the food industry.
 - Food Safety management schemes (IFS, BRC, etc.) have already incorporated specific Food Fraud requirements into their requirements.
- Many companies have policies and programs in place that help in preventing Food Fraud across the entire supply chain. However, *it is necessary to enhance some of these policies and programs to focus on Food Fraud*.

Food Fraud mitigation goal: Protect your company and its brands from potential risks associated with EMA



The Food Risk Matrix

Prevent by Understanding the Motivation

Security	Food Quality	Food Fraud ⁽¹⁾	Motivation Gain: Economic
	Food Safety	Food Defense	Harm: Public Health, Economic, or Terror
	Unintentional	Intentional	
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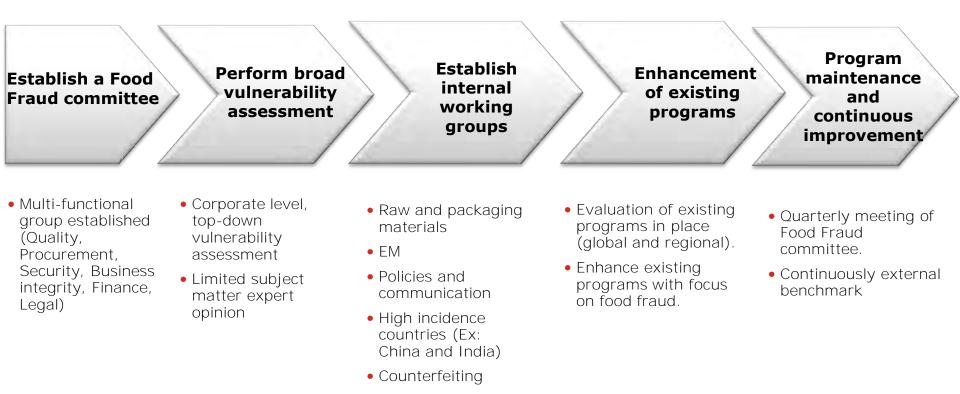
Food Safety, Food Defense and Food Fraud are part of an Integrated Supply Chain Management Approach Focused on Preventative Systems across Key Risk Factors

Risk Categories **Food Safety Food Defense Food Fraud** Intentional adulteration Unintentional Intention adulteration for contamination (ideological motivated economic gain (Economically adulteration) Motivated Adulteration) **Examples** Incidental contamination Melamine in dairy products Product tampered with with food grade lubricant extraneous mater. Horse-meat

• Mineral oil added to vegetable oil

Food Fraud mitigation strategy

Implementation steps



Continuous improvement to re-evaluate the vulnerability assessment based on new facts (inside and outside the company) and the efficacy of the implemented programs. Enhance programs based on new Food Fraud requirements and available tools.

The Food Fraud opportunity is present across the entire value chain:

- Inside your supply chain (External Manufacturing)
- Upstream in the supply chain: adulteration of raw material
- Downstream in the supply chain: **diversion of finished products**
- Parallel stream: counterfeited products

Working groups are created to review existing policies and programs in place, and work to enhance the programs with specific focus on Food Fraud

Working group

Policies, Communication, horizon scanning and benchmarking

Raw and Packaging Material

Counterfeiting and Diversion

External Manufacturing

High incidence areas

Responsibility

- Supplier Quality, Toxicology, Security
- Supplier Quality, Toxicology, Food Safety, Procurement
- Security, Customer Service
- Procurement, R&D, Supplier Quality
- Supplier Quality, Security

Business Integrity, Finance (Risks and Insurance) and Legal overview all the programs

Policies and Communication to ensure Food Fraud program is understood by key stakeholders. External benchmarking and horizon scanning.

Internal policies and communication

- Incorporate Food Fraud into existing policies (Corporate and Quality policies)
- Communicate Food Fraud program to senior management

External policies and communication

- Incorporate Food Fraud clauses into next version of your Supplier Expectations
- Have a specific communication to external stakeholders

Benchmark with other companies and food associations

- Use GFSI tool and/or GMA tool for vulnerability assessment
- Benchmark with peer companies
- Horizon scanning : systematically and continuously monitor main food fraud databases/alarm systems
 - Map existing tools for food safety/food fraud alert
 - Define rolls and responsibilities for periodically scanning these tools

Focus on Raw and Packaging material

- Develop Risk Matrix for raw materials based on the raw material category and sourcing country
 - Raw material risk profile reviewed by Supplier Quality, Toxicologist and Food Safety.
 - Share Raw material Risk Matrix outcome with other stakeholders (Quality Audit, Procurement)
 - Integrate and/or share information using a Business Continuity Risk Assessment (led by Procurement).

Incorporate Food Fraud into Supplier Quality Audits

- Internal Audits: Add specific questions focusing on high risk raw materials/ high risk suppliers (e.g. supply chain control, finished product testing).
- Third-Party/GFSI audits: Food Fraud assessment will be required from 2017 onwards

Chemical contaminants testing in raw materials

- Check for mycotoxins, heavy metals, pesticides, veterinary drugs, dioxin, as well as specific potential adulterants (melamine, mineral oil, illegal dyes, etc.).
- Tests need to be done by an accredited 3rd party lab
- Program should be managed by the Global Quality function and executed at the regional/business unit level.
- Review the distribution of samples across the regions in lieu of Food Fraud incidents.

Packaging material

- Few cases in literature/media related to packaging fraud
- Use of non-food grade inks and materials

Have effective policies and programs in place to deal with Counterfeiting and diversion

Anti-Diversion

- Have Corporate policies in place: Global Anti-Diversion Policy and Guidelines
- Many policies and procedures focus on inter-country diversion

Anti-Counterfeiting program

- Manage in conjunction with Food Fraud and Brand Protection programs.
- Engagement from other relevant functions with coordination 'on the ground' by Global Security.
- Quantification + calibration of all actioned cases + increased overall awareness = reduction in issue / business risk.
- Anti-counterfeiting program:
 - o Monitor 'at risk' markets
 - assess critical information
 - o action critical cases (in conjunction with business & regulators)
 - publicize key strategic 'wins'
 - recycle lessons back to category teams/business

External Manufacturing

- 3 areas of *potential* vulnerability:
 - ✓ raw materials
 - ✓ diversion of finished product
 - ✓ diversion of non-conforming product
- Supplier Quality should work with Procurement/Purchasing to better understand control measures in place to mitigate the risks above:
 - Suppliers of external manufacturers (Do you know who are the suppliers? Do you know which kind of certification the suppliers have? Do these suppliers have Food Defense programs in place?)
 - Finished product reconciliation (Do you request finished product reconciliation for the supplier, e.g. amount of packaging material + production losses = units produced?)
 - Destruction of non-conforming product (How do you evaluate destruction of non-conforming products? How often?)
 - Contract: liability clause (Do all contracts with External manufacturers contain liability clause reviewed by Legal and Insurance groups?)

Watch-Outs/Challenges

- Involvement and engagement from all functions
 - Many people take a "it won't happen here" approach
- Trying to do too many things at once in your Food Fraud program
 - There is a lot of information and potential areas to review; Break it down by area to enable the program to be manageable
- Assuming that you can do the Food Fraud work in a short time
- Completing your vulnerability assessment and then not doing anything with it

Summary

- A company-wide Food Fraud Program brings visibility to several areas that support your overall Risk Management program. The Food Fraud umbrella highlights the importance of each of these programs on building a Food Fraud prevention strategy.
- The implementation of a Food Fraud program allows different functions to share information. It promotes new ways of working among the functions.
- You need to continue to evolve your strategy to fulfill these requirements, benchmark with other companies, certification bodies and food associations, and re-evaluate your Food Fraud risk Assessment.