Quarterly Trends Update: Food Fraud Compliance and the Implications to Your Business: 3Q-2018

Webinar: Wednesday, September 19, 2018 1:00 to 2:00 PM ET

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



WWW.FoodFraud.MSU.edu Twitter @FoodFraud and #FoodFraud



Food Fraud Curriculum

Massive Open Online Course (MOOC - free, open, online)

- Free, open, online, open to everyone, includes a 'certificate of completion'
- Food Fraud Overview MOOC Open; self-paced
- Food Fraud Audit Guide MOOC Usually monthly
- Food Defense Audit Guide MOOC Usually monthly
- Training: FFVA & FFPS June 18, 25 & July 2

Executive Education (Short-Course)

• Food Fraud Strategy, Quantifying Food Risk with Vulnerably Assessments

Graduate Courses (Online, Three Credits)

- Food Fraud Prevention
- Anti-Counterfeit & Product Protection (Food Fraud)
- Quantifying Food Risk (including Food Fraud)
- Global Food Safety (including Food Fraud)
- Food Protection and Defense (Packaging Module)
- Packaging for Food Safety

Graduate Certificate (Online, Four Courses Each)

Certificate in Food Fraud Prevention (Food Safety)

Master of Science in Food Safety (Online)

www.online.FoodSafety.msu.edu

Certificate in International Food Law

<u>https://www.canr.msu.edu/iflr/</u>



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Defining Food Fraud

- Action: *Illegal* deception for economic gain using food
 - Consistent with GFSI, EC/EU, UK, ISO, and others...
 - Includes the sub-category of "Economically Motivated Adulteration" or EMA
 - Note: FDA currently defines EMA as a "substance" for "economic gain"
- Motivation: Economic Gain
 - "Food Defense" motivation is traditionally harm or terror
 - "Food Defense (FDA/FSMA-IA)" is narrowed to "wide-scale human health harm"
- Effect:
 - Economic Threat
 - Public Health Vulnerability or Threat

Examples

- Horsemeat in ground beef
- Peanut Corporation selling known contaminated product
- Diluted or extra virgin olive oil
- Melamine in pet food and infant formula
- Over-icing with unsanitary water

- Unauthorized unsanitary repackaging (uplabeling or origin-laundering)
- Cargo Theft reintroduced into commerce/ Stolen products
- Expired product date code tampering or "refreshing"

Reference: Spink & Moyer (2011). Defining the Public Health Threat of Food Fraud, Journal of Food Science

Link to MSU-FFI Glossary:

http://foodfraud.msu.edu/2018/03/20/for-comment-glossary-of-food-fraud-related-terms-03-2018-please-participate/

GFSI Issue 7 Published Food Fraud Defined and Scope

- "A collective term encompassing the deliberate and intentional substitution, addition,...
- Tampering...
- or misrepresentation (mislabeling) of food,
- food ingredients...
- Or food packaging, labelling, product information or false or misleading statements made about a product...
- for economic gain...
- •_that could impact consumer health."

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Terminology (Types of Fraud)

Table 2: Table: Food Fraud Types, Definitions, and Examples (adapted from (Spink and Moyer 2011, Spink 2013, SSAFE Organization 2015, PWC Price Waterhouse Cooper 2016, GFSI 2017, Spink, Ortega et al. 2017))

- Dilution
- Substitution
- Concealment
- Unapproved Enhancements
- Mislabeling
- Gray Market Production/ Theft/ Diversion
- Counterfeiting (IPR)

APPENDIX: DETAIL OF TYPE OF FRAUD, AND EXAMPLES

Tacking Food Fraud Through Food Safety Market

May 2018

Table 2: Table: Food Fraud Types, Definitions, and Examples (adapted from (Spink and Moyer 2011, Spink 2013, SSAFE Organization 2015, PWC PriceWaterhouseCooper 2016, GFSI 2017, Spink, Ortega et al. 2017)

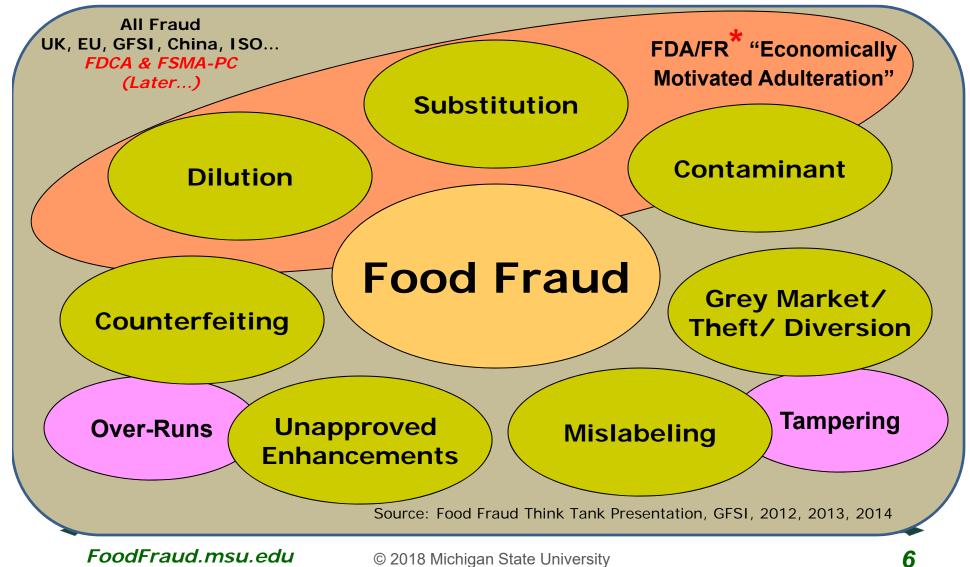
GFSI (1) Type of Food Fraud	Definition from SSAFE (2)	Examples from GFSI FFTT (3)	General Type of Food Fraud
Dilution	The process of mixing a liquid ingredient with high value with a liquid of lower value.	Watered down products using non-potable / unsafe water Olive oil diluted with potentially toxic tea tree oil	Adulterant- substance (Adulterant)
Substitution	The process of replacing an ingredient or part of the product of high value with another ingredient or part of the product of lower value.	 Sunflower oil partially substituted with mineral oil Hydrolyzed leather protein in milk 	Adulterant- substance or Tampering
Concealment	The process of hiding the low quality of a food ingredients or product.	 Poultry injected with hormones to conceal disease Harmful food colouring applied to fresh fruit to cover defects 	Adulterant- substance or Tampering
Unapproved enhancements	The process of adding unknown and undeclared materials to food products in order to enhance their quality attributes.	 Melamine added to enhance protein value Use of unauthorized additives (Sudan dyes in spices) 	Adulterant- substance or Tampering
Mislabelling/ Misbranding	The process of placing false claims on packaging for economic gain.	Expiry, provenance (unsafe origin) Toxic Japanese star anise labeled as Chinese star anise Mislabeled recycled cooking oil	Tampering
Grey market production/ theft/diversion	Outside scope of SSAFE tool.	 Sale of excess unreported product, Product allocated for the US market appearing in Korea 	Over-run, Theft, o Diversion (4)
Counterfeiting (IPR)	The process of copying the brand name, packaging concept, recipe, processing method etc. of food products for economic gain.	 Copies of popular foods not produced with acceptable safety assurances Counterfeit chocolate bars 	Counterfeiting (IPR)
(2) SSAFE – Safe S (3) GFSI FFTT – G (4): Gray Market	products for economic gain. Food Safety Initiative iecure and Affordable Food For Everyon lobal Food Safety Initiative: Food Fraud - a market employing irregular but not he act or an instance of diverting strayin	e Think Tank illegal methods; Theft something st	olen; Diversion/

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TACKIUNG FOOD FRAUD THROUGH FOOD SAFETY MANAGEMENT SYSTEMS - MAY 2022

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What is Food Fraud?



FY Food Fraud Initiative Food Fraud Initiative The Food Risk Mathematical Food Food Risk Mathematical Food Fraud Initiative Food Fra

Prevent by Understanding the Motivation

Food Quality	Food Fraud EMA	Motivation Gain: Economic
Food Safety	Food Defense Wide-scale Terrorism	Harm: Public Health, Economic, or Terror
Unintentional	Intentional	
Acti		

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

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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.

Every 'vulnerability' does *NOT* need a control plan.

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.

GP3 is aware that the harmonization and best practices are just row being developed and refined. A new system that is lies than a year of lin implementation cannot be expected to be as robust thorough, or detailed as a system such as HACC that has been implemented for more than 25 years. The most important tep for the food inductivit is to start addressing food fraud, and for audions to start addressing back constitutions of the start as those the varies. The start of the start of

The focus of the auditor should be in assessing the approach taken by the company (is it companywide? Is it built by a multi-disciplinary team? is it clearly documented and reviewed regularly? What's the source of information used to support the assessment?).

² GFSI position paper on food fraud, 2014

Audit Depth

... from "point A" to "point B" not yet all the way to "point z"

- "GFSI is aware that the harmonization and best practices are just now being developed and refined. A new system that is less than a year old in implementation cannot be expected to be as robust, thorough, or detailed as a system such as HACCP that has been implemented for more than 25 years."
- "The most important step for the food industry is to start addressing food fraud, and for auditors to start asking the basic questions on how vulnerabilities were assessed and identified, and a strong mitigation plan thought through."

Incoming Goods & Outgoing Goods - Key Points

- "All" not necessary "every" or "each"
 - can cluster into groups... even very big groups
- Include "Other" to address "all"
 - admittedly a very broad category... it can be further refined later...
- Just get started... and complete an assessment
 - Identify future needs...
 - Getting to "point B" not all the way to "point Z"

FSMA Food Fraud/ EMA Preventive Controls Rule

- Review: Final Rule for FSNIA Preventative Controls regarding Food Fraud and EMA 1. Uniquely addressing Food Fraud/EMA that could lead 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** (Refer to the Adulterated Foods & Misbranded Foods in FDCA)
- 3. It appears that current broad Food Fraud Vulnerability Assessment and Food Fraud Prevention Plan activities will lead to compliance with FSMA-PC for EMA/FF.
 - 1. Unique *Hazard* Assessment
 - 2. Address *Hazard* (Prevention Plan)

http://foodfraud.msu.edu/wp-content/uploads/2015/09/FDA-FSMA-ERM-FRN-draftrulemaking-2015-v12-formatted.pdf

"Economically-Motivated Food Safety Hazards (Food Fraud) Monday, May 9, 2016 - 3:00 to 3:30 PM John Spink, PhD Director & Assistant Profess Food Fraud Initiative, Michigan State University INKJ@msu.edu www.FoodFraud.MSU.edu

Chapter 5

Chapter 58

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CHEMICAL, PHYSICAL AND ECONOMICALLY MOTIVATED FOOD SAFETY HAZARDS

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FSPC/

FSMA LAW (above the Final Rule)

Hazard analysis (FSMA 21 CFR 117.130 & 507.33)

- "(a) (1) you must conduct a hazard analysis to identify and evaluate... known or reasonably foreseeable hazards..."
- "(2) The hazard analysis must be written *regardless of its outcome*"
 - "(ii) The hazard may be unintentionally introduced; or"
 - "(iii) The hazard may be intentionally introduced for purposes of economic gain."
 - Note: a separate Food Fraud assessment is NOT required.
 - Note: an assessment of all vulnerabilities IS required.

Audit Non-Conformance – results and warnings...

QUARTERLY UPDATE

Food Fraud Compliance Requirements: Dates

- GSFI (FSSC, SQF, IFS, BRC) January 2018
- GFSI (BRC) July 2015 (1.5 yrs. before GFSI)
- FSMA-Preventive Controls September 2016
 - "(2) The hazard analysis must be written regardless of its outcome"
- Food Drug & Cosmetics Act Adulterated Foods– 1938
- Sarbanes-Oxley 2002 and 2007
 - ALL risks to earnings are controlled or disclosed

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C FSSC 22000	Food Fraud Requirements				
FSSC 22000 and Food Fraud Prevention Jacqueline Southee, FSSC 22000 US Liaison Food Safety Summit, May 9th 2018	ON 2.1.4.4.1 Vulnerability assessment The organization shall have a documented and implemented vulnerability assessment procedure in place that: 1) identifies potential vulnerabilities 2) develops control measures and 3) prioritizes them against the identified vulnerabilities				
 FSSC 22000 FF & FD Guidance documents Voluntary support document including: Background Definitions Requirements Implementation Team and training Auditing References 	 Non Conformity Grading – FF & FD Critical NC FF and FD requirements are completely ignored: no risk assessment done, no plan and not embedded in FSMS; A direct food safety impact observed and/or certification integrity at stake. Major NC FF and FD requirements are completely ignored: no risk assessment done, no plan and not embedded in FSMS; 				
Guidance on Food Fraud & Food Defense 10 April 2018	Minor NC				

REVIEW: Non-Conformance/ Conformance (FSSC 22000)

- "Incomplete"
 - All type of fraud stated and demonstrated
 - All products stated and demonstrated
 - Some method to gather information
- "execution not effective"
 - Does not convince the auditor that you did actually address this.
 - Weak or no methodology
 - Weak or no evidence of action (written? Plan and execution?)
- "or not fully embedded in FSMS"
 - Explain how the assessment and strategy is connected to the overall food safety management system
 - Integrated, calibrated, or correlated assessment

Auditor Perspective

Top FF Non-Conformance:

- Vulnerability Assessment (62%): Nonexistent or inadequate
- **Product Inspection (21%):** No evidence of incoming verification methods
- Assurance/Testing (6%): Lack of tests or assurance actions when materials are being identified at particular risks
- Reference: AIB (2018), GFSI Annual Conference, Tokyo



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REVIEW: Food Fraud Compliance Requirements: Scope

"Food Fraud Compliance Requirements — The general compliance requirements for Food Fraud prevention are:

- 1. Conduct a Food Fraud Vulnerability Assessment (Y/N)
- 2. Written (Y/N)
- 3. Implement a Food Fraud Prevention Strategy (Y/N)
- 4. Written (Y/N)
- Minimally conduct an annual Food Fraud Incident Review (Y/N)
- 6. Note: Address all types of Food Fraud (Y/N)
- Note: Address all products from both incoming goods (e.g., ingredients) and outgoing goods (e.g., finished goods) through to the consumer." (Y/N)

Reference:

- Food Safety Magazine, Feb 2017, "Food Fraud Vulnerability Assessment and Prefilter for FSMA, GFSI and SOX Requirements", http://www.foodsafetymagazine.com/magazine-archive1/februarymarch-2017/food-fraud-vulnerability-assessment-and-prefilter-for-fsma-gfsi-andsox-requirements/
- New Food Magazine, Feb 2017: Food Fraud Prevention how to start and how much is enough?", http://www.newfoodmagazine.com/33890/new-food-magazine/past-issues/issue-1-2017/issue-1-2017-digital-version/

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Call to Action

- 1. Review the GFSI requirements
- Review your current certification status AND report to see if the auditor asked the full set of questions.
- 3. Consider the "7 Questions" if any "no" then get education on next steps.

MSU Engagement 2018

	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, ~\$2200
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) 2019 dates TBD
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 FoodFra Contact: John S	Engage global network of Food Fraud thinkers gud.msu.edu pink, <u>SpinkJ@Msu.edu</u>	Two, 2-hour on-line webinar format with assessment. Students earn an MSU "credential". ²⁰¹⁸ Michigan State University – 517.381.4491 – <u>http://Foc</u>	Overview: Open; self-paced FF Audit Guide: Monthly FFVA & PS: Monthly Food Defense Audit Guide: Monthly 20

Acknowledgements

- **MSU Veterinary Medicine:** Dean Christopher Brown, Chair Dan Grooms, Chair Ray Geor, Dr. Wilson Rumbeiha, Cindy ٠ Wilson, Dean John Baker
- MSU Global: Associate Provost/ Executive Director Christine Geith, Jerry Rhead, Gwyn Shelle, Lauren Zavala, Associate • Provost/ EVP Dr. Karen Klomparens, Rashad Muhammad
- Queens's University Belfast (UK): Professor & Director Christopher Elliott, Dr. Moira Dean, Dr. Michael Hollis ٠
- MSU Online Master's of Science in Food Safety: Director Melinda Wilkins, Ex-Director Julie Funk, Kristi Denbrock, • Heather Ricks, Peggy Trommater, Heidi Chen, Dr. Gary Ades, Chair Ray Goer
- MSU Food Science: Chair Fred Derksen, Les Bourguin, Bradley Marks, Felicia Wu, VP of Research Ian Gray, David ٠ Ortega, Gale Strasburg
- MSU Program in Public Health: Director Michael Rip and Douglas C Moyer •
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- MSU Food Safety Policy Center: Dr. Ewen Todd ٠
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- MSU International Programs: Dr. Mary Anne Walker, Dr. John Whimms ٠
- State of Michigan's Ag & Food Protection Strategy Steering Committee: Dr. John Tilden, Brad Deacon, Gerald ٠ Wojtala, Byron Beerbower
- The Citadel: Dr. Roy Fenoff

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https://youtu.be/xZgEgNaoQLI

Discussion

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https://youtu.be/0wAAxfjdQ2c

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22

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