TACCP & VACCP

(threats to food safety & food fraud)

AWARENESS COURSE
AGENDA

• HACCP vs TACCP vs VACCP
• TACCP (Food Defence Plan)
  - threats
  - process
• VACCP (Food Fraud Mitigation Plan)
  - vulnerabilities & terminology
  - food fraud vulnerability assessment tool
  - process
• Auditor’s responsibilities.
HACCP is designed to prevent unintentional food safety issues.

Intentional threats to food safety for ideological reasons is increasing – requirement for a Food Defence Plan (TACCP) – e.g. deliberate contamination/poisoning of food.

Food fraud for economic reasons is also increasing – requirement for a food fraud mitigation plan (VACCP) – e.g. horse meat being passed off as minced beef in Europe and melamine added to dairy products in China.
Food Safety Management System

**HACCP**
Hazards
- Prevention of unintentional / accidental adulteration
  - Science based
  - Food borne illness

**TACCP**
Threats
- Prevention of intentional adulteration
  - Behaviourally or ideologically motivated

**VACCP**
Vulnerabilities
- Prevention of intentional adulteration
  - Economically motivated
TACCP
(Threat Assessment Critical Control Point)
Definition

• a management process to defend a food supply chain from the threat of intentional contamination

• TACCP aligns with HACCP, but has a different focus that may need input from different areas of an organisation (eg HR, procurement and security)

• threats are different to vulnerabilities as they're performed for ideological reasons rather than economic reasons.
Threats

- malicious contamination of food products
- sabotage of the supply chain
- using food or drink items for terrorism or criminal purposes
- economically motivated adulteration
- extortion
- espionage
- counterfeiting
- cybercrime.
Activity #1

Review cases of food threats:

- [http://news.bbc.co.uk/2/hi/uk_news/magazine/7868115.stm](http://news.bbc.co.uk/2/hi/uk_news/magazine/7868115.stm)
- [http://www.mirror.co.uk/news/7-sickening-cases-food-sabotage-4322010](http://www.mirror.co.uk/news/7-sickening-cases-food-sabotage-4322010)
TACCP Process

1. Establish a Threat Assessment Team (should be multi-disciplinary)
2. Develop a risk assessment methodology
3. Develop a flow chart of the supply chain
4. Identify the steps where there is a potential threat to:
   • the organisation and key staff
   • operations
   • product
5. Assess those steps to identify the risk as CCP or CP
6. Identify and monitor threat controls for each CCP.
TACCP Process…cont.

7. Develop action plan if controls are breached, including immediate correction and corrective action

8. Document the TACCP Plan

9. Train staff accordingly

10. Regularly review the TACCP Plan.
Auditing Requirements

Regardless of the process used, FSSC 22000, Part 2, Additional Requirements, Clause 2.1.4.3, requires clients to have a Food Defence Plan which:

• identifies potential threats
• develops control measures
• prioritises them against the identified threats
• implements those controls.
VACCP
(Vulnerability Assessment Critical Control Point)
Definition

- a management process to defend the food supply chain from vulnerabilities due to food fraud
- shift in focus from risk to vulnerability
- based on ‘criminological routine activity theory’.
Opportunity related fraud risk factors
+ Motivations related fraud risk factors
- Fraud control measures
= Actual fraud vulnerability.
Vulnerabilities

• substitution
• dilution
• counterfeiting
• unapproved enhancements
• concealment
• mislabelling
• grey market production/diversion.
**Terminology**

**FOOD FRAUD**

- **Substitution**
  - Sunflower oil partially substituted with mineral oil
  - Hydrolyzed leather protein in milk

- **Concealment**
  - Poultry injected with hormones to conceal disease
  - Harmful food colouring applied to fresh fruit to cover defects

- **Dilution**
  - Watered down products using non-potable/unsafe water
  - Olive oil diluted with potentially toxic tea tree oil

- **Mislabelling**
  - Expiry, provenance (unsafe origin)
  - Toxic Japanese star anise labeled as Chinese star anise
  - Mislabeled recycled cooking oil

- **Counterfeiting**
  - Copies of popular foods — not produced with acceptable safety assurances.

- **Unauthorized Enhancements**
  - Melamine added to enhance protein value
  - Use of unauthorized additives (Sudan dyes in spices)

- **Grey Market Production/Theft/Diversion**
  - Sale of excess unreported product
Activity #2

Review cases of food fraud

- https://www.foodqualitynews.com/Trends/Food-fraud
Food Fraud Vulnerability Assessment Tool

- one option is to use the tool developed by SSAFE & PwC, which is accepted by GFSI
- available on-line in Excel, Apple App Store (only for iPad not iPhone) or Google Play
- Decision Tree to decide ingredient, product, brand, facility, country or company-wide level
- 50 questions: 9 – opportunities, 20 – motivations, 21 – control measures
- Spider web diagram
- Report (Food Fraud Mitigation Plan).
Information to be considered

- historical incidents
- any emerging concerns
- economic factors/price fluctuations
- country/area of origin
- complexity and length of the supply chain
- storage and distribution facilities and location
- material value and market size
- physical form of the material
- existing control measures
- availability
- ease of access to materials.
**VACCP Process**

1. Establish an Vulnerability Assessment Team (multi-disciplinary)

2. Use SSAFE’s Food Fraud Vulnerability Assessment Tool (or a similar tool):
   1. use Decision Tree to identify exposure to risk (eg ingredients, suppliers, customers, product lines, brands, region, company-wide)
   2. summarise information resulting from Decision Tree analysis
   3. complete questionnaire to identify risks
   4. review main spider webs and certainty (opportunities, motivation and controls)
   5. review detailed spider webs (opportunities/motivation vs controls)
   6. review risk assessment at Output Sheet.
   7. create Report.

*JLB – TACCP-VACCP - # 20*
VACCP Process…cont.

Using Report:

3. Develop action plan if controls are breached, including immediate correction and corrective action

4. Document the VACCP Plan

5. Train staff accordingly

Activity #3

Review SSAFE’s Food Fraud Vulnerability Assessment Tool
www.ssafe-food.org.
Auditing Requirements

Regardless of the process used, FSSC 22000, Part 2, Additional Requirements, Clause 2.1.4.4, requires clients to have a Food Fraud Prevention (Mitigation) Plan which:

• identifies potential threats
• develops control measures
• prioritises them against the identified threats
• implements those controls.
Food Safety Management System

= OPRP/CCP Plan (OPRP & HACCP)
+ Food Defence Plan (TACCP)
+ Food Fraud Mitigation Plan (VACCP).
Auditor’s Requirements

• TACCP - ensure client has documented a Food Defence Plan based on a reasonable risk assessment of the threats to the food supply chain

• VACCP – ensure client has a documented Food Fraud Mitigation Plan based on SSAFE’s Food Fraud Vulnerability Assessment Tool

• TACCP & VACCP – ensure CCPs are being monitored, staff are appropriately trained and the Plans are regularly reviewed (annually).
Summary

• HACCP: risk assessment to prevent unintentional food safety hazards – Food Safety Plan

• TACCP: intentional threat to supply chain for ideological reasons – Food Defence Plan

• VACCP: intentional food fraud/vulnerability for economic reasons – Food Fraud Mitigation Plan

• all based on risk assessment to identify risks, implement and monitor controls, and react to CCPs out of control.
QUESTIONS?

Thanks