
Assuring Food Quality & Food Safety in UK Food Industry

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- Member of UK Institute of Food Science & Technology
- Panel Member of UK Chartered Quality Institute for ISO9001:2015
- Panel Member of Advisory Board for International Register of Certificated Auditors (IRCA)
- IRCA: 3rd-Party Registered Lead Auditor
- Member of Institute of Directors, UK
- Guest Lecturer – Nanyang Technological University, Singapore and Loughborough University, UK
- Co-Chair of the Industry Stream for '*Industrial Engineering and Operations Management Conference*', Dubai, March 2015

AGENDA

- Food Industry Career Background
- UK Food & Drinks Manufacturing Sector
- UK & European Food Scares
- Key General UK Food Legislation
- Key Food Quality Schemes
- Global Food Safety Initiative (GFSI)
- BRC Global Standard for Food Safety
- Conclusions
- Questions

UK Food & Drinks Manufacturing Sector

- Largest single manufacturing sector in UK:
 - 18.3% of total manufacturing by turnover
- Turnover: £95 billion; GVA: £25.7 billion
- UK population: 64 million
 - Employs 400,000+ direct food & drink employees
 - Over 17% of total manufacturing employees
- Food Standard Agency – UK Regulatory Body
- Numerous Trade Bodies e.g.:
 - Food & Drink Federation
 - National Farmers Union
 - British Retail Consortium

Source: UK Office for
National Statistics



Key UK & European Food Scares

- 1980-1999 UK: BSE in cattle (Mad Cow Disease)
- 2001 UK: Foot & Mouth Disease - not pose threat to food safety
- 2005 South Wales – major E.coli outbreak in cooked meats; meat supplier
- 2006 UK: Cadbury; volunteered reporting possible small traces of salmonella; Product recall as precautionary measure
- 2007 FSA research linking certain artificial food colours & sodium benzoate to hyperactivity in children
- 2011 Europe: E.coli outbreak in cucumbers and beansprouts
- 2013 UK & Europe: ‘Horsemeat Scandal’

Key General UK Food Law

- 2006 Food Hygiene (England) Regulations 2006
 - Regulation (EC) No: 852/2004
 - Regulation (EC) No: 853/2004
 - Regulation (EC) No: 854/2004
- 2004 The General Food Regulations 2004 (as amended)
- 2002 The General Food Law Regulation (EC) no. 178/2002
- 1990 The Food Safety Act 1990 (as amended)

UK Regulations: Jan-Aug14 Snapshot

- **2014**
- [3104](#) - Fish Labelling (Amendment) Regulations 2014
- [3001](#) - Products Containing Meat etc. (England) Regulations 2014
- [2975](#) - Weights and Measures (Food) (Amendment) Regulations 2014
- [2885](#) - Food Safety and Hygiene (England) (Amendment) Regulations 2014
- [2748](#) - Official Feed and Food Controls (England) and the Food Safety and Hygiene (England) (Amendment) Regulations 2014
- [1855](#) - Food Information Regulations 2014
- [195](#) - Olive Oil (Marketing Standards) Regulations 2014
- **2013**
- [3243](#) – Infant Formula and Follow-on Formula (England) (Amendment) Regulations 2013
- [2996](#) - Food Safety and Hygiene (England) Regulations 2013
- [2949](#) - Spirit Drinks (Costs of Verification) Regulations 2013
- [2854](#) - Environmental Noise, Site Waste Management Plans and Spreadable Fats etc. (Revocations and Amendments) Regulations 2013
- [2775](#) - Fruit Juices and Fruit Nectars (England) (Amendment) Regulations 2013
- [2210](#) - Food Additives, Flavourings, Enzymes and Extraction Solvents (England) Regulations 2013
- [2196](#) - Contaminants in Food (England) Regulations 2013
- [1768](#) - Fish Labelling Regulations 2013
- [1683](#) - Specified Products from China (Restriction on First Placing on the Market) (England) (Amendment) Regulations
- **2013**
- [804](#) - Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (Amendment) Regulations 2013
- [466](#) - Food (Miscellaneous Amendment and Revocation) (England) Regulations 2013
- [264](#) - Food Safety (Sampling and Qualifications) (England) Regulations 2013

Key UK Food Quality Schemes-1

- Assured Food Standards: All display distinct British Food Label Logo on retail food packs e.g.:
 - **Red Tractor**: Farm assurance scheme standards: livestock, fresh produce and crops
 - **LEAF** scheme : *'Linking Environment and Farming'*
 - Promotes: Sustainable & environmental-focused farming



Key UK Food Quality Schemes-2



Food Standards Agency



Food Hygiene Rating



British Lion Eggs



Freedom Food



Soil Association



Scores-on-Doors



Safe & Local Supplier Approval



Key UK Food Safety Standards

- BRC-British Retail Consortium: Global Standards:
 - Food Safety v7: January 2015
 - Packaging & Packaging Material Standard, v4: 2011
 - Storage & Distribution- v2: 2010
 - Agents & Brokers – v1: 2014
- HACCP- Hazard Analysis Critical Control Points
 - Food safety risk management system
 - Legal requirement to Regulation (EC) No: 852/2004
- BS EN ISO 22000:2005 – Food Safety Management System
 - bridges gap between ISO9001 and HACCP
 - Revision process started in 2014
 - Manufacturers require: ISO/TS 22002-1 requirements

Global Food Safety Initiative-GFSI

- GFSI:
 - managed by Consumer Goods Forum
 - Comprising of leading international food manufacturers, suppliers, retailers, technical experts
- benchmarking body for harmonisation international food safety standards
- Stringent requirements: **Guidance Document**
- BRC Global Standard for Food Safety: 1st standard approved

‘Once certified, accepted anywhere’

BRC Global Standard for Food Safety

- Key Emphasis:
 - Minimise the risk of fraud
 - Transparency of agents and brokers usage
 - Greater transparency across entire food supply chain
 - Enhanced product labelling requirements e.g. recall/changeover
 - Enhanced risk assessment: raw materials and finished products
 - Production Risk Zones: Ambient High Care for ambient-high risk product e.g. peanut butter
 - Enhanced Customer focus- meeting contractual requirements

High standards of staff training throughout....

*..ensuring finished product **integrity, quality, safety and legality..***

BRC Global Standard for Food Safety

1. Senior Management Commitment
 2. Food Safety Plan-HACCP
 3. Food Safety & Quality Management System
 4. Site Standards
 5. Product Control
 6. Process control
 7. Personnel
- Robust documented policies & procedures
 - Records maintenance
 - **Minimise Product Contamination**

1. Senior Management Commitment

- Implementing the Standard requirements
 - Provision of resources; finance; industry / technical updates
- Engender culture of Continual Improvement
 - Food safety and quality
 - Quality management environment
 - Customer confidence
- Documented Policy
 - Signed & communicated to staff
 - Setting strategic objectives
 - Senior Management Review
 - Charts, roles & responsibilities

2. Food Safety Plan - HACCP

- Risk-management systems to identify & prevent food-related hazards: **Microbiological, Physical, Chemical & Allergen**
- Multi-disciplinary Team(s)
- Define scope of HACCP Plan: all products & processes
- Developed on Prerequisite Programmes (PRPs)
- Environmental & Operational Programmes e.g.
 - Cleaning; pest control; personnel hygiene; low & high risk areas; allergen control
- 7 Step process

3. Food Safety & Quality Management System

- Food Safety & Quality Manual
- Documentation & Record Control
- Internal Auditing / Auditor Competence
- Supplier Monitoring
- Agents & Brokers Monitoring
- Outsourced Processing & Packing Control
- Specifications & review
 - Raw Materials & Packaging
 - Finished products
- Non-Conforming Product, Corrective Action
- Traceability System
- Product Recall
- Customer Focus & Communications

4. Site Standards-1

- **Local environment e.g.**
 - Water courses risk to floods; wastelands
- **External Maintenance : local areas & buildings e.g.:**
 - Vegetation; adequate drainage; traffic surfaces
 - Sealed pipework; eliminate bird nesting sites; ingress of water
- **Site security**
 - Site registration: legal requirement
 - Unauthorised access e.g. security gates; CCTV; keypads: locks
 - External product storage e.g. flour silos

4. Site Standards-2

- **Plant Layout**

- Site plan
- Movement Flow: Staff, visitors; contractors; materials; waste
- Product Flow via segregated Production Zones e.g. High risk area to minimise cross-contamination

- **Building Fabric :**

- Support effective cleaning
- Walls; floors; drainage; ceilings; overheads; doors; lighting; ventilation
- Utilities: water; ice; air; other gases (NO₂, CO₂)

4. Site Standards-3

- **Maintenance**

- Equipment; PPM; engineering workshops; food grade materials

- **Staff Facilities**

- Changing facilities, including High-risk; personal items; handwash facilities; toilets; smoking; food

- **Product Contamination**

- Non-food chemical storage, Strong scents
- Metal items e.g. knives; cheese wires; paper clips
- Glass; metal; plastic. Handling & Breakage Procedures & Registers
- Wood e.g. wooden cask for alcoholic beverages

4. Site Standards-4

- **Housekeeping & Hygiene**
 - Cleaning schedules, cleaning procedures; staff training
- **Waste / Waste Disposal**
 - Legal compliance
- **Pest Control**
 - Pest Control Contact or in-house capability
 - Baits, fly-killing

4. Site Standards-5

- **Foreign Body detection**
 - Filters, metal detection, sieves, magnets, X-ray detection
- **Storage Facilities**
 - Packaging e.g. glass, cardboard, cans
 - Temperature Control; Humidity; Modified Atmospheric control
 - Stock Rotation
- **Despatch & Transport**
 - Vehicle Inspection; temperature control; maintenance
 - Third party contractors

5. Product Control-1

- **Product Authenticity: Fraud Prevention**
 - Minimise risk of purchasing fraudulent or adulterated raw materials
 - All product descriptions verified to be legal & accurate
- **New Product Development**
 - HACCP Approval
 - Factory Trials
 - Shelf-life evaluation
- **Product labelling**
 - Legality of Labels; nutritional claims; allergen claims

5. Product Control-2

- **Management of allergen**
 - Minimise risk of allergenic contamination
 - Raw materials risk assessment
 - Cleaning regimes
- **Product Testing**
 - In-process testing; finished product; shelf-life verification; pathogen testing; routine testing
 - Laboratory accreditation: ISO17025 or equivalent
- **Product Release**
 - Product released when all procedures completed
 - Positive release; release criteria completed & authorised

6. Process Control-1

■ Control of Operations

- Manufacturing Specifications
- Process Specifications
- Process monitoring e.g. temperature; time; pH; viscosity
- In-line monitoring e.g. temperature logger

■ Production Line Checks

- Clean & ready for production
- Metal detectors; CCPs and Quality parameters correct;
- Correct packaging selected; coding checks (e.g. date, batch, bar, pricing)
- automated vision equipment e.g. scanners / cameras to check correct information
- Product Quantity Control: By weight, volume & number
 - Legal requirements to country where sold
 - Customer requirements

6. Process Control-2

- **Calibration, Measuring & Monitoring Devices**
 - Key equipment checking CCPs checked against recognised national or international standards e.g.
 - Weighing scales, thermometers and pH meters

 - Master Reference Equipment calibrated and traceable to national or international standards e.g.
 - Master thermometer, Master weight

7. Personnel-1

■ Training

- All staff trained where product safety, quality and legality are affected by their performance
- Seasonal, temporary and contractors staff trained
- Staff Training commensurate to role & include:
 - CCP -correct management
 - Allergen -handling ingredients, packaging, equipment
- Training Programmes, Competency Review, Records

7. Personnel-2

■ Personnel Hygiene

- Minimise risk product contamination from staff
 - Jewellery, make-up, perfume
 - Hand-cleaning
 - Cuts & grazes; metal detectable plasters; personal medicine
- Medical Screening
 - Illness notification for staff & visitors
 - Suffer or contact with infectious diseases; relocation to non-open product areas
- Protective Clothing
 - Uniform; overalls; head-coverings; shoes; boots; gloves; aprons
 - Contract laundry services; Risk-based assessment

Conclusions

- UK Food Safety standards and legislation– Respected globally
 - Enforced rigorously- nationally and locally
 - UK Consumer and Business schemes and campaigns: heighten awareness to promote food quality and safety
 - Creating Food Quality and Safety Culture
 - Mandated by the Senior Management Team
 - Stringent staff training and stakeholder
 - Major food retailers operate globally and mandate GFSI and private label Codes of Practices
 - Global customer confidence in UK food and beverage products
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Conclusions

....ensuring finished products that are produced to **high standards** of.....

***Integrity, Quality, Safety and
Legality....***

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