MODULE 3
Food safety in F&V processing, traceability and marketing standards

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MORNING
- Overview of Food Safety Management Systems and legal requirement vs voluntary standards
- HACCP – Basic requirements of voluntary Standards

AFTERNOON
- Establishing a Food Safety Management System
- Supplying Management
HACCP - BASIC REQUIREMENTS OF VOLUNTARY STANDARDS

The Codex Alimentarius General Principles of Food Hygiene (1995) lays a firm foundation for ensuring food hygiene, highlighting:
- the key hygiene controls at each stage along the food chain from primary production through to the final consumer
- the Hazard Analysis Critical Control Point (HACCP) approach wherever possible to enhance food safety
- food safety viewed as only one important aspect of overall food quality

The HACCP approach is internationally recognized as essential to ensuring the safety and suitability of food for human consumption, and it enhances the potential for international trade.

- form an horizontal framework underpinning all EU and national measures
- cover all stages of the production, processing and distribution of food as well as feed produced for (or fed to) food-producing animals
- establish the principle of risk analysis in relation to food and feed
- guarantee a high level of protection of human health and of consumers’ interests
- guarantee fair practices in food trade, considering animal health and welfare, plant health and the environment
- ensure free movement of food and feed manufactured and marketed in the EU
- facilitate global trade of safe feed and food
- establishes the structures and mechanisms for the scientific and technical evaluations, which are undertaken by the European Food Safety Authority (EFSA).
Food law is based on the three interrelated components of risk analysis:
- Risk assessment
- Risk management
- Risk communication

- Food safety is of critical importance
- Tracing food and feed throughout the food chain is also very important
- The traceability:
  - facilitates withdrawal of faulty food/feed from the market
  - provides consumers with targeted and accurate information on specific products
  - covers all food/feed, all food/feed business operators
  - affects importers who are required to be able to identify from whom the product was exported in the country of origin
  - obliges businesses to be able to identify at least the supplier of the product and the immediate subsequent recall
Hazard Analysis and Critical Control Points (HACCP) is a process control system designed to identify and prevent microbial and other hazards in food production. HACCP is a system that identifies, evaluates and controls hazards which are significant for food safety. It is a structured, systematic approach for the control of food safety.

The most important aspect of HACCP is that it is a preventive system rather than an inspection system of controlling food safety hazards. Prevention of hazards cannot be accomplished by end-product inspection.
GHP and GMP

- GMP regards manufacture & process controls, including supplier control, specifications, calibration of equipment, traceability & recall, equipment designs (where conditions for food safety can be achieved, maintained & monitored), lighting & ventilation systems, storage conditions, control of operations.

- GHP regards system/measures for maintaining hygiene & sanitation, include personal hygiene, employee health conditions, maintenance of plant & equipment hygiene (food contact surfaces, pest control, waste disposal, water quality, toilet & hand wash facilities, prevention of cross contamination).
Differences among standards

Differences among Produce Quality Standards:
- assessing the conformity of suppliers
- combination of issues (environmental, social, food safety and quality)
- transmitting information along the supply chain
- process rather than product standards
- means of reinforcing policy and supporting its application
- degrees of openness and opportunity for stakeholder input in their development
- application may include a label (B2C) or information from supplier to buyer (B2B)
- company web sites as source of information
Application to small and large processors

Certification to Private Food Standards schemes opened market opportunities for many food businesses, but:

- Cost of certification can be excessively burdensome particularly to small-scale operators.
- Lack of harmonization
- Difficulty to access to qualified auditors in some Regions
- Few nationally benchmarked programs
- monitoring
- Documentation

This underlines the need for private standard setters and governmental authorities to better understand the impact of private standards and to take measures to optimize the benefits of certification and reduce difficulties that they pose, particularly to developing countries.
Voluntary Food Safety Management Systems and standards

**Food safety standards** may be of various types:
- numerical standards defining required characteristics of products
- process standards that define how the food should be produced
- process standards that define the requirements of the management system

**5 major functions** that are involved in standard schemes:
- standard setting
- adoption
- implementation
- conformity assessment and
- enforcement
Prescription presents several advantages:

- Producers/processors can clearly understand what is required of them.
- Auditors can readily judge with relative uniformity whether the required provisions are being met.
- Standard implementers have reasonable assurance that their requirements are met by their suppliers.
- Knowledge and tools to implement them.
- Documentation carefully rationalized in such a way as to provide the necessary food safety guarantees without introducing obstacles and inefficiencies in the day-to-day running of the operation.
Having a **Food Safety Management System** is important because:

- any breach of regulation could threaten your business
- failure to manage food safety risks in your business could bring harm to customers.

**Your FSFM details:**

- the procedures you use to maintain compliance,
- your business’ specific risks and hazards and controls,
- all relevant information necessary to manage food safety successfully in your business.

**One of the first steps implementing FSMS:** what are customer requirements and what will need to be done to meet those requirements.
Structural improvements

- Walls, partitions, floors: no toxic materials, smooth surface up to a appropriate
- Floors: constructed to allow adequate drainage and cleaning
- Ceilings: constructed to minimize dirty, condensation, shedding of particles;
- Windows: easy to clean, minimizing dirty, fitted with insect-proof screens, fixed;
- Doors: smooth, non-absorbent surfaces, and be easy to clean/disinfect;
- Working surfaces into direct contact with food: durable and easy to clean, maintain and disinfect, made of smooth, non-absorbent materials inert to the food.
- Activities separated by effective means where cross-contamination may result.
- Buildings and facilities: regulated flow to facilitate hygienic operations, available blueprints and/or process flow diagrams.
- Exterior designed, constructed, maintained to prevent pests/contaminants and cross-connection
- Drainage and sewage systems equipped with appropriate traps and vents.
A Full Food management system can be broken down into 8 sections (or steps) covered in as much detail as possible:

- Step 1 – Policy.
- Step 2 – HACCP Introduction.
- Step 3 – Critical Control Points.
- Step 4 – Enforcement officer inspections.
- Step 5 – Complaints Procedure.
- Step 6 – HACCP Summary.
- Step 7 – Physical Premises Standards.
- Step 8 – Supporting Documentation.
Maintenance

Appropriate facilities and procedures should be in place to ensure that any necessary cleaning and maintenance is carried out effectively and an appropriate degree of personal hygiene is maintained.

Harmful or undesirable microorganisms or their toxins are eliminated or reduced to safe levels or their survival and growth are effectively controlled;

Critical limits established in HACCP-based plans can be monitored;

Temperatures and other conditions necessary to food safety and suitability can be rapidly achieved and maintained.
Training

Next step to implementing FSMS is communication and training. Factors to take into account for level of training in growing, harvesting and packing:

- The nature of the fruit or vegetable to sustain growth of microorganisms.
- The agricultural techniques and inputs used in the primary production.
- The task the employee is likely to perform, and the hazards and controls associated with those tasks.
- The manner in which fresh fruits and vegetables are processed and packaged.
- The conditions under which fresh fruits and vegetables will be stored.
- The extent and nature of processing or further preparation by the consumer before final consumption.

Topics to be considered for training include, but are not limited to, the following:

- Good health and hygiene for personal health and food safety.
- Hand washing for food safety, proper hand washing techniques, sanitary facilities reducing potential contaminations, other workers, and water supplies.
- Techniques for hygienic handling and storage of fresh fruits and vegetables.
Your management system planning must include how you will verify that:

- PRPs are implemented
- Inputs to hazard analysis are updated
- Operational PRPs are implemented and effective (FSSC 22000 and ISO 22000)
- The HACCP plan is implemented and effective
- Hazard levels are within limits
- Procedures for the FSMS are implemented and effective

The monitoring program will be made up of physical measurement or observations that can be done in a timely manner.

All verification activities must be recorded and the records provided to the food safety team.
SUPPLYING MANAGEMENT

Raw materials or ingredients should not be accepted by an establishment if it is known to contain parasites, undesirable microorganisms, pesticides, veterinary drugs or toxic, decomposed or extraneous substances which would not be reduced to an acceptable level by normal sorting and/or processing.

Water quality management. The quality of water used should be dependent on the stage of the operation.

Post-harvest systems Application of antimicrobial agents, followed by a wash as necessary, should be done to ensure that chemical residues do not exceed recommended levels.

Prevention of health hazards. begins with control of incoming materials. Inadequate incoming ingredient controls could result in product contamination and/or under processing.
Packaging
- sort food and ingredients to segregate material unfit for human consumption;
- dispose of any rejected material in a hygienic manner;
- protect food and food ingredients during handling from contaminations.

Calibration
- Develop effective procedures for calibration and document those procedures;
- Maintain records of calibration activities, including corrective actions;
- Review records to ensure that procedures are being followed;
- Check by audit calibration procedure to ensure them

Logistic providers
- Storage facilities and vehicles built to minimize contamination and let easy cleaning.
- Fresh fruits and vegetables must be adequately protected during transport
- Transport vehicles adequately cleaned, and where necessary disinfected, to avoid cross-contamination.
Additional points to consider

- Ingredients requiring refrigeration appropriately stored and monitored.
- Ingredients and packaging materials handled and stored in such a manner as to prevent damage and/or contamination.
- Rotation of ingredients and where appropriate packaging materials controlled to prevent deterioration and spoilage.
- Humidity-sensitive ingredients and packaging materials stored under appropriate conditions to prevent deterioration.
- Non-food chemicals received and stored in dry/well-ventilated, designated areas.
- Finished product stored and handled under conditions that prevent deterioration.
- Stock rotation should be controlled, stored and handled to prevent damage.
- Returned defective or suspect product should be clearly identified and isolated in a designated area for appropriate disposition.
Agenda

JUNE 12th

MORNING
- Voluntary Standards in the food industry: IFS, BRC, GFSI
- Other Voluntary Standards in the food industry

AFTERNOON
- Why Food Safety Management Systems are particularly relevant for F&V businesses.
- Towards Sustainability: new scenarios in the global market
The main drivers for the proliferation of these private food safety schemes have been:
- the clear assignment of legal responsibility to food chain operators for ensuring food safety;
- increasingly global and complex supply chains; and,
- increasing consumer awareness of food and food systems and their impact on health and, in particular, on food safety.

Food industry leaders created the Global Food Safety Initiative (GFSI), with a vision of Safe food for consumers everywhere, to find collaborative solutions to collective concerns, notably to reduce food safety risks, audit duplication and costs while building trust throughout the supply chain.
- Standards recognized by GFSI are accepted at international level:
  - IFS, requested by French, German, Italian Retailers
  - BRC global standard, requested by the UK Retailers
IFS (Food, Logistic, Broker)

- Organizational structure in relation to responsibility, authority, qualification and job description,
- Documented procedures and the instructions concerning their implementation,
- Inspection and testing: specified requirements and defined acceptance / tolerance criteria,
- Actions to be taken in case of non-conformities,
- Investigation of the causes of non-conformities and the implementation of corrective actions,
- Conformity analysis of safety and quality data and review of implementation in practice,
- Handling, storage and retrieval of quality and food safety records, such as traceability data, document control.
The Standard focuses on:
- encouraging development of product safety culture;
- expanding the requirements for environmental monitoring
- encouraging sites to further develop systems for security and food defence
- adding clarity to the requirements for ambient high-care production risk zones
- providing greater clarity for sites manufacturing pet food
- ensuring global applicability and benchmarking to the Global Food Safety Initiative.

The Standard is now in its Issue 8 and is divided into nine sections:
- 1. Senior management commitment
- 2. The food safety -HACCP- plan
- 3. Food safety and quality management system
- 4. Site standards
- 5. Product control
- 6. Process control
- 7. Personnel
- 8. High-risk
- 9. Requirements for traded products
OTHER VOLUNTARY STANDARDS IN FOOD INDUSTRY

- FSSC 22000 (Food Safety ISO Standard)
- SQF (Safe Quality Food)
- GMP+
- Other examples, interplaying between public and private spheres, in relation to standard setting:
  - Organic standards
  - Fair trade standards
  - Voluntary standards such as those relating to Geographical Indication
In recent years there has been concentration in the retail sector with a small number of retailers controlling a high proportion of the market share. In most European countries the 5 largest retailers account for between 50% to over 70% of retail food sales. Furthermore, private labels reportedly account for an increasing proportion of sales, accounting for 14% at global level in 2000 and roughly 22% of total retail food sales at global scale. The private standards act as significant hurdles to market access.

Private standards may undermine IPM programmes which are strongly supported and adopted by a number of governments as public policy. Some countries are considering ways of integrating private standard certification into overall national systems of food control to strengthen public health protection.
GI is a particular voluntary standard:

- The code of practice (i.e. specification) is specific to a product from a particular production area.
- The role of primary producers and processors: they benefit from the added value, and the value is redistributed locally.
- The GI approach is collective, because the GI and its reputation are collective. The advantages of collective action (economies of scale, stronger market power, synergies) are particularly interesting for small-scale actors.
- The GI (the link to origin) is assessed and recognized (registered) by public authorities.
Many Standards refer to the **triple bottom line** of **environmental quality, social equity, and economic prosperity** of global production and trade practices. These standards are guidelines for producing, selling and purchasing products in a sustainable manner. They provide manufacturers and retailers with information about the reliability and safety conditions behind a product and provide consumers with information about the sustainability efforts taken for their production and manufacturing, with the aim of positively affecting communities, the environment and the economy.

The basic premise of Sustainability standards which has led to the emergence of hundreds of ecolabels, organic and other standards is twofold:

- they emerged in areas where national and global legislation was weak but where the consumer and NGO movements around the globe demanded action
- leading brands selling to both consumers and to the B2B supply chain may wish to demonstrate the environmental or organic merits of their products
The importance of applying a holistic approach

ISO 26000 “Guidance on social responsibility” is the repository of good practice and expertise from industry, government, labour organizations, non-governmental organizations and consumers.

Environmental and Social standards can be grouped across 4 ‘universal’ thematic areas:

- GOOD GOVERNANCE
- ENVIRONMENTAL INTEGRITY
- ECONOMIC RESILIENCE
- SOCIAL WELL-BEING

Core indicators provide ratings for the highest performance and unacceptable practices, depending on context.

In order to achieve sustainability objectives, they rely to a large extent on activities undertaken.