FSSC 22000 - Version 6

Food Safety System Certification

Training Summary Report

Date	09 March 2026
Venue	Bigtree Beverages MFEZ, Lusaka, Zambia
Conducted by	Intertek - Total Quality Assurance
Hosted by	QA Department, Bigtree Beverages Limited
Author	Esiah Kapinga - Quality Assurance Officer

Confidential — Internal Training Document

1. OVERVIEW

What is FSSC 22000?

FSSC 22000 stands for Food Safety System Certification 22000. It is a globally recognised, scheme-based certification standard that provides a comprehensive framework for managing food safety risks within the food supply chain. The number series '22000' is assigned to food safety by the ISO (International Organisation for Standardisation).

ISO Management System Standards

Standard	Scope
ISO 9001	Quality Management Systems

ISO 14001	Environmental Management Systems
ISO 22000	Food Safety Management Systems (first published 2005)
OHSAS 18001	Occupational Health and Safety Management Systems

2. HISTORY OF FOOD SAFETY SYSTEMS

The formal development of food safety management principles can be traced back to the 1960s, when NASA (National Aeronautics and Space Administration) faced the critical challenge of producing, processing, and storing food for astronauts on space programmes. The food had to be safe, free from pathogens, and have an extended shelf life under conditions that made conventional quality inspection impractical. This initiative gave rise to what eventually evolved into the HACCP system, the scientific cornerstone of modern food safety management.

3. COMPONENTS OF FSSC 22000 - VERSION 6

FSSC 22000 Version 6 is built on three interlocking components:

- ISO 22000:2018 - The core food safety management system standard, updated in 2018. Forms the foundation of the scheme.
- ISO/TS 22002-X Series - Technical specifications defining sector-specific Prerequisite Programmes (PRPs):
  - **ISO/TS 22002-1:** PRPs for food manufacturing
  - **ISO/TS 22002-3:** PRPs for farming (including egg production)
  - **NEN/NTA 8059:** PRPs for food brokers and agents (Netherlands-origin standard)
  - **BSI/PAS 221:** PRPs for retail (British Standards Institution Publicly Available Specification)
- Additional Requirements - Mandatory scheme-specific requirements developed by the FSSC 22000 Foundation, beyond ISO 22000 and the ISO/TS 22002 series (detailed in Section 6).

Version 5.1 - QMS Module

Version 5.1 introduced an optional QMS (Quality Management System) module integrating ISO 9001 (quality management) with ISO 22000 (food safety management) into a single, unified auditable system framework. This allows organisations to align quality and food safety objectives under one system.

4. THE FOOD CHAIN

Definition

In the context of the food production industry, the food chain refers to the complete sequence of interconnected stages and operations involved in the production, processing, distribution, storage, and consumption of food. It begins at primary production - farming, animal rearing, or harvesting of raw materials - and extends through processing, packaging, transportation, retail, and ultimately the end consumer. Every link in this chain has the potential to introduce, carry, or control food safety hazards; effective food safety management must therefore be applied across the entire chain.

Food Chain Categories - FSSC 22000

Category	Description
A-I / A-II	Farming of animals - livestock and aquaculture (Roman numerals I and II)
C-I to C-IV	Food manufacturing - covering various subcategories of processing operations
D-I / D-IIa / D-IIb	Production of animal feed and pet food
E	Catering and food service
F	Retail and wholesale trade
G	Transport and storage
I	Production of food packaging and packaging materials
K	Production of (bio)chemicals used in food production

PDCA Cycle — Execution Framework

The PDCA (Plan-Do-Check-Act) cycle is the operational methodology used to implement, maintain, and continually improve the FSSC 22000 management system:

- **Plan - Identify objectives, hazards, risks, and define control measures.**
- **Do - Implement the planned processes, PRPs, and HACCP controls.**
- **Check - Monitor, measure, and verify that controls are effective.**
- **Act - Take corrective action and drive continual improvement.**

5. FOOD SAFETY

Definition

According to ISO 22000:2018, food safety is defined as the assurance that food will not cause harm to the consumer when it is prepared and/or consumed according to its intended use. In practical industrial terms, food safety is the guarantee that all food produced within an organisation's processes is free from

biological, chemical, physical, and allergenic hazards at levels unacceptable to human health - ensuring no consumer is harmed as a result of consuming the product.

6. ADDITIONAL REQUIREMENTS — FSSC 22000 V6

The following additional requirements are mandatory for FSSC 22000 certification, on top of ISO 22000 and the relevant ISO/TS 22002 series:

1. Management of Services and Purchased Materials

Applicable to all food chain categories. Organisations must have documented processes to evaluate, select, monitor, and re-evaluate all external providers - suppliers and service providers. All incoming materials, ingredients, and services must meet defined food safety and quality requirements.

2. Product Labelling and Printed Materials

Applicable to all food chain categories. All product labels and printed packaging materials must comply with applicable legal and regulatory requirements and accurately communicate allergen, nutritional, and usage information to the consumer.

3. Food Defence

Addresses the risk of intentional adulteration or contamination by individuals with malicious intent. Comprises:

- TACCP (Threat Assessment and Critical Control Points) - A systematic methodology for identifying and assessing threats from intentional acts. Organisations must conduct a documented threat assessment and develop a food defence plan.
- Food Defence Plan - Identifies critical areas of vulnerability, assigns ownership of controls, and defines response and escalation protocols.

4. Food Fraud Mitigation

Addresses the deliberate substitution, addition, tampering, or misrepresentation of food for economic gain. Comprises:

- VACCP (Vulnerability Assessment and Critical Control Points) - A systematic process for identifying supply chain vulnerabilities exploitable for fraudulent purposes and prioritising control measures.
- Food Fraud Mitigation Plan - Documented controls for high-risk vulnerabilities, with defined ownership and review frequency.

5. Environmental Monitoring Programme (EMP)

Organisations must implement a documented programme to detect the presence of pathogens - particularly Listeria monocytogenes and Salmonella spp. - in the processing environment. Must include defined sampling sites, frequencies, testing methods, corrective action procedures, and trend analysis.

6. Allergen Management

A documented allergen management programme covering identification of allergenic materials, risk assessment for cross-contact, physical and procedural segregation controls, cleaning validation, and accurate allergen declaration on product labelling.

7. Food Safety Culture

Version 6 places increased emphasis on food safety culture. Organisations must demonstrate active commitment to embedding food safety values at all levels - documented objectives, communication of values, engagement of personnel, and measurement of cultural maturity over time.

8. Quality Management - QMS Module

Where adopted, the organisation must demonstrate integration of ISO 9001 quality management principles alongside food safety requirements, systematically addressing quality objectives, customer focus, and continual improvement.

7. HACCP, TACCP & VACCP

HACCP - Hazard Analysis and Critical Control Points

HACCP is a systematic, science-based approach to identifying, evaluating, and controlling food safety hazards that are significant in the food production process. It is a preventive system - rather than relying on end-product testing - designed to ensure that potential hazards are identified and controlled at specific points before they can cause harm. HACCP specifically addresses unintentional (naturally occurring or accidental) hazards within the processing environment.

Preliminary Steps

- Assemble the food safety team and define the scope of the HACCP study.
- Describe the product - ingredients, intended shelf life, and storage conditions.
- Identify the intended use and target consumer groups, including vulnerable populations.
- Construct and verify the process flow diagram through on-site confirmation.
- Describe the processing steps and associated process parameters.

The 7 Principles of HACCP

1. **Hazard Analysis:** Identify and evaluate all biological, chemical, physical, and allergenic hazards at each process step.

2. **Determine Critical Control Points (CCPs):** Identify steps where control is essential to prevent, eliminate, or reduce a hazard to an acceptable level.
3. **Establish Critical Limits:** Define the maximum and/or minimum parameter values that must be controlled at each CCP.
4. **Establish Monitoring Procedures:** Define how each CCP will be monitored: method, frequency, and responsible person.
5. **Establish Corrective Actions:** Define actions to be taken when monitoring indicates a CCP is not under control.
6. **Establish Verification Procedures:** Confirm the HACCP system is effective through audits, additional testing, and review of CCP records.
7. **Establish Documentation and Record-Keeping:** Maintain all HACCP records and conduct regular reviews and updates of the system.

Types of Hazards

Hazard Type	Examples
Physical	Foreign objects: glass fragments, metal shards, plastic pieces, stones, wood splinters
Chemical	Lubricants, cleaning and sanitising chemicals, pesticide residues, chemical spills
Biological	Pathogenic bacteria (Salmonella, Listeria, E. coli), moulds, yeasts, viruses
Allergenic	Milk, eggs, fish, peanuts, tree nuts, wheat, soy — any ingredient causing adverse immunological reactions

TACCP - Threat Assessment and Critical Control Points

TACCP is a systematic methodology used to identify, assess, and manage threats arising from intentional acts targeting the food supply chain. Unlike HACCP - which addresses accidental hazards - TACCP focuses on deliberate attacks motivated by malicious intent: product tampering, sabotage, extortion, or terrorism. The process involves identifying credible threat actors (e.g., disgruntled employees, contractors with site access), assessing their capability and intent, and implementing targeted control measures at the most vulnerable points of the operation.

> **INDUSTRY EXAMPLE - TACCP**
>
> A beverage manufacturer identifies that its open-top blending tanks - accessible to all production-area staff, represent a high-threat point for intentional contamination. The TACCP assessment results in locked tank covers, restricted access controls, and CCTV monitoring of the blending area as targeted control measures.

VACCP - Vulnerability Assessment and Critical Control Points

VACCP is a systematic process used to identify and manage vulnerabilities in the food supply chain that could be exploited for food fraud - the deliberate adulteration, substitution, dilution, mislabelling, or misrepresentation of food for economic gain. The assessment evaluates each ingredient and input material against factors such as historical fraud incidents, economic motivation, supply chain complexity, and the adequacy of existing controls.

Key Components

- **Supply Chain Mapping:** Identification of all ingredients, processing aids, and packaging materials and their respective supply chains.
- **Vulnerability Scoring:** Each material scored on economic motivation for fraud, supply chain accessibility, historical incidents, and detectability of adulteration.
- **Prioritisation:** High-risk materials escalated for enhanced controls: supplier audits, certificates of analysis, independent testing, and approved supplier lists.
- **Food Fraud Mitigation Plan:** Documented controls assigned to high-risk vulnerabilities with defined ownership and review frequency.

INDUSTRY EXAMPLE - VACCP

A juice manufacturer sources concentrated fruit juice from multiple international suppliers. The VACCP assessment identifies this as high-risk for economic adulteration (e.g., dilution with cheaper juice or addition of undisclosed sugars). Controls implemented: mandatory third-party isotopic testing per batch and annual unannounced supplier audits.

8. A QUESTION TO REFLECT ON

Esiah Kapinga

QA Officer - Bigtree Beverages Limited, Lusaka

OPEN QUESTION - FOOD FRAUD & VACCP

A supplier produces raw mango pulp - no added sugar, no external material. Pure, unadulterated product on their side. They document it, they trust their process, and they dispatch it.

On the receiving end, the plant conducts intermediate analysis and detects an abnormally high Brix reading, a figure not achievable from raw mango pulp alone. Suspicion of sugar adulteration is raised and a formal complaint is filed against the supplier.

Here is the problem: the supplier cannot afford to lose this - not financially, but in terms of reputation and market standing. They maintain they did nothing wrong, and on their side, they genuinely may not have. Yet the evidence at the receiving plant points in one direction.

Given that VACCP is designed to assess and respond to food fraud vulnerabilities - how do you justify an intentional fraud finding against a supplier when the exact point of compromise cannot be conclusively established? And whose burden of proof is it when the breach may have occurred at any point between production and receipt?

Reflect on this I asked at the end of the training and note that, There is no single answer to this question - this is the grey area that VACCP frameworks, supplier agreements, chain-of-custody documentation, and independent third-party testing are all designed to navigate.

9. ABOUT INTERTEK

TRAINING FACILITATED BY INTERTEK

Intertek is a leading Total Quality Assurance provider operating in more than 100 countries worldwide. The organisation delivers testing, inspection, certification, and auditing services across the food and beverage, consumer products, chemicals, and manufacturing sectors. In the food industry, Intertek provides FSSC 22000, ISO 22000, BRC, and other food safety certification and training services. The FSSC 22000 Version 6 training conducted at Bigtree Beverages MFEZ on 09 March 2026 was facilitated by Intertek as an accredited certification and training body.