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## Understanding Global Food Safety Standards: HACCP, ISO, and FSSC 22000

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In today's globalized food industry, ensuring food safety is not just a regulatory requirement but a critical responsibility for food producers and processors. The rise in international trade, evolving consumer expectations, and heightened awareness of foodborne illnesses have made robust food safety management systems essential. Among the most widely recognized food safety standards are Hazard Analysis and Critical Control Points (HACCP), the International Organization for Standardization's ISO 22000, and the Food Safety System Certification (FSSC) 22000. These systems form the backbone of global food safety compliance and help businesses ensure the safety, quality, and traceability of their food products.

### HACCP: Hazard Analysis and Critical Control Points

HACCP is a preventive system designed to ensure food safety from biological, chemical, and physical hazards in production processes. Developed in the 1960s by NASA and the Pillsbury Company to provide safe food for astronauts, HACCP has since become a global standard in food safety management.

HACCP is structured around seven core principles:

1. Conduct a hazard analysis
2. Determine critical control points (CCPs)
3. Establish critical limits
4. Establish monitoring procedures
5. Establish corrective actions
6. Establish verification procedures
7. Establish record-keeping and documentation procedures

By identifying and controlling potential hazards at critical points, HACCP allows food businesses to take preventive measures rather than relying solely on end-product testing. It is mandatory in many countries and serves as the foundation for more advanced food safety systems.

### ISO 22000: Food Safety Management System

ISO 22000, first published by the International Organization for Standardization in 2005, is a comprehensive food safety management system that integrates the principles of HACCP with key elements of ISO's quality management systems. ISO 22000 is applicable to all organizations in the food chain, from farm to fork, including food manufacturers, packagers, transporters, and retailers.

Key features of ISO 22000 include:

1. Systematic management of prerequisite programs (PRPs)
2. Comprehensive hazard analysis and control measures
3. Communication along the food chain

4. Continual improvement through the Plan-Do-Check-Act (PDCA) cycle  
ISO 22000 helps organizations identify and control food safety hazards, ensuring food is safe at the time of human consumption. It aligns with other ISO management standards, making it easier for companies to integrate food safety into their overall business management systems.

### **FSSC 22000: Food Safety System Certification**

FSSC 22000 is an ISO-based certification scheme developed by the Foundation FSSC and recognized by the Global Food Safety Initiative (GFSI). It builds upon ISO 22000 and adds additional requirements such as sector-specific prerequisite programs and specifications for services, labeling, and food fraud mitigation.

FSSC 22000 is designed for the certification of food safety systems of organizations in the food chain that process or manufacture animal products, perishable produce, long shelf-life products, food ingredients, and packaging material.

Benefits of FSSC 22000 include:

1. GFSI recognition, facilitating global market access
2. Integration with other management systems (e.g., ISO 9001)
3. Enhanced customer confidence and brand reputation
4. Alignment with regulatory and customer requirements

### **Comparison and Integration**

While HACCP is a foundational food safety tool, ISO 22000 and FSSC 22000 offer more comprehensive frameworks. ISO 22000 incorporates HACCP principles but adds a structured management system similar to ISO 9001. FSSC 22000 takes this a step further by including sector-specific requirements and being GFSI-recognized.

All three standards share common goals:

1. Risk-based thinking
2. Preventive control measures
3. Documentation and traceability
4. Continuous improvement

Many food businesses implement these standards in combination, using HACCP as the core tool for hazard analysis while adopting ISO 22000 or FSSC 22000 for broader organizational management and certification.

### **Global Impact and Importance**

Global food safety standards play a crucial role in protecting public health, ensuring consumer trust, and facilitating international trade. Adherence to HACCP, ISO 22000, and FSSC 22000 helps organizations meet regulatory requirements, avoid food recalls, and access new markets. Moreover, these standards promote a food safety culture by encouraging leadership commitment, employee involvement, and ongoing training. In an era where food supply chains are increasingly complex and interlinked, standardized safety frameworks are indispensable.

### **Conclusion**

Understanding and implementing global food safety standards such as HACCP, ISO 22000, and FSSC 22000 is vital for any organization involved in food production and supply. These standards not only help mitigate risks but also enhance operational efficiency and build consumer confidence. As the global food industry continues to evolve, the importance of robust, internationally recognized food safety management systems will only grow.

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