

ROMANIA'S ORGANIC FOOD MARKET. GOOD PRACTICES IN FOOD SAFETY MANAGEMENT

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Abstract

Contemporary global markets face an intensive development that is correlated with higher demands from the modern consumer. This is leading to a new complex approach regarding the food sector and its' niche markets. The simple three-point process that once characterized the food market: "to produce – to sell – to buy" has now evolved into elaborated models based on more determinants that have one common challenge: safety and quality. Thus, the present study aims to highlight the importance of food safety management systems in producing quality food, when their principles are not limited to safety issues only. In this context, producers' accountability in ensuring quality food products can be achieved by implementing standardize methods of production that promote a common approach on safety and quality, and also that promotes transparency, more exactly by informing consumers in a correctly and completely manner in order to set their expectations. In other words, the research focuses on quality management systems as defining instruments that can assure high-quality food products are being delivered at competitive prices to domestic and international markets. Another key aspect aims to identify a set of good practices from Romanian companies that activated in the organic food industry and use HACCP to control both food safety and organic requirements and that can represent motivation for other businesses to adopt the food safety management system in accordance with the organic legislation.

Keywords

Food safety, quality management system, HACCP principles, organic food market, food quality systems.

JEL Classification

L15, L660, Q550, M11

Introduction

Nowadays, knowledge of commodities is becoming more and more important as a result of the enhance of international trade, that requires mercheological knowledge, government-developed laws and rules based on merceological arguments (for example, regulations on what must be written on labels goods, composition standardization, clear specification on ingredients that must be avoided or permitted in food, cosmetics, in packaging, regulations on the effects of production and use of goods on the environment, etc.).

Moreover, media coverage (newspapers, magazines, radio, television) of a series of incomplete information regarding products, transform the advertising role by aiming for a

direct and rapid orientation of consumers towards certain acquisitions, without a proper selection.

Quality management and food safety management systems are essential to reinforces the argument that food industry is a solid support for communities for which it works. In order to meet the needs and global expectations of consumers, there must be an integrated, uniform and imperative approach for industry organizations, namely to have quality standards and tools such as ISO 9000, Codex Hygiene (GMP / GHP and HACCP) and ISO 22000.

The requirements and processes needed for each standard have been successfully initiated and implemented worldwide by companies that activated in the food industry for a long period of time. Multiple studies consider also that a positive recovery of investment exists behind the application of HACCP, as companies can reduce the cost of products and distribution. It also reduces the number of products withdrawn from distribution, which can cost the company with up to 90 million dollars or more as well the impact of value for shareholders, market share, and brand reputation. (Kuchinski, 2014).

Taking into account the fact that many countries do not have adequate infrastructure to ensures food control, so as to protect the health of consumers against the dangers they might pose and the fraud, Codex Alimentarius Commission adopted at its 13th session (December 1985), the Code of Ethics for International Trade in Food. In drafting the Code, the Codex Alimentarius Commission started from several key premises, food safety being the result of several factors: legislation that should set minimum hygiene requirements; official controls that should be carried out to identify to what extent the food business operators comply with these requirements and food business operators must establish and implement food safety programs and procedures based on HACCP principles.

Organic farming is the result of the same quality food systems and in this context food safety and organic performance go hand in hand (Epuran et al., 2018).

This article aims to provide a general overview of the main directions of implementation for quality management and food safety systems such as HACCP, ISO 22000 and ISO 9000 to control food safety risks as well as to identify a set of good practices from Romanian companies that activated in the organic food industry and use HACCP to control both food safety and organic requirements and that can represent motivation for other businesses to adopt the food safety management system in accordance with the organic legislation. In this sense, key benefits obtained as a result of this approach are highlighted.

Thus, it can be identified that HACCP systems and organic food requirements share highly compatible concepts and principles that, if they are applied together, can determine multiple benefits to both consumer and producer in terms of food safety and quality.

1. Food Safety Management: Defining a control system for the global food supply chain

As a result of intensive development and multiple mutations of the modern food market, food safety management is constantly promoted by important global organizations (like Food and Agriculture Organization, International Organization for Standardization or the European Union) that act as leading parties in creating an adequate infrastructure to ensures traceability in terms of food control. In general, this upward trend has determined an increasing public awareness regarding food safety and food security, one of the biggest challenges of the food market today being to assure availability for a wider public to superior quality food, in terms of a cleaner environment (Chia-Lin, 2014).

From a notional point of view, quality management and its principles have served as a starting point for the development of food safety systems.

Thus, in the context of all the activities that an organization carries on in order to plan, control, coordinate and improve quality as a main determinant of any product, food safety

deepens the concept of quality, focusing on the food segment, ensuring that the food product will not cause an adverse health effect for the consumer when it is prepared and/or consumed in accordance with its intended use (ISO 22000: 2005).

In this context, the industry has rapidly adapted and developed, food companies being able to choose today from a wide range of management tools in order to be able to better understand, develop, improve and control quality and safety matters (Pamfilie et al, 2016). According to Peter Overbosch (2014), there are multiple food safety initiatives promoted around the globe, but the biggest impact in the food industry is brought by the following:

- GFSI - The Global Food Safety Initiative
- HACCP - Hazard Analysis and Critical Control Points
- ISO 22000 Food safety management
- ISO 9001 Quality Management Systems
- 6 Sigma – quality focused methodology

Pursuing this goal, the Food and Agriculture Organization (FAO) together with the World Health Organization (WHO) have set up in 1961 the Codex Alimentarius Commission as an international body responsible with adopting a series of food standards that regulate international food trade, promoting fair practices and consumers' health.

One of the most important document in terms of food safety management, issued by the Codex Alimentarius Commission, that involves traceability of the food chain, following from primary production through to final consumption and highlighting the key hygiene controls at each stage, is the General Principles of Food Hygiene Codex. Its principles recommend food companies to adopt a HACCP-based approach by implementing a Hazard Analysis and Critical Control Point (HACCP) System in order to improve food safety and develop specialized management systems.

The HACCP system is a result of the increasing market trend in the food industry to maintain an even stricter control on manufacturers, in order to offer consumers high-end quality products, but also safer products from a microbiological and bacteriological point of view. A HACCP-based approach considers production, packaging, transport, storage and selling of food products as processes that involve health risks for the final consumer. Thus, HACCP, as an internationally recognized food safety system, consists of a systematic and preventive analysis of each production and commercial phase, in order to identify critical points in these processes and prove that the related food safety risks (biological, chemical and physical) are identified, evaluated and kept under control.

According to the Codex Alimentarius Commission there are seven HACCP principles, that food companies must apply in implementing food safety management systems. These principles are presented below along with some authors' key notes (Stanley et al, 2011):

- Principle 1: *Conduct a hazard analysis* - prepare a flow diagram of the steps in the process. Identify and list the hazards together with their causes/sources, conduct a hazard analysis to determine if the hazards are significant for food safety and specify the control measures.

- Principle 2: *Determine the critical control points (CCPs)* - a decision tree can be used.

- Principle 3: *Establish critical limit(s)* that must be met to ensure that each CCP is under control.

- Principle 4: *Establish a system to monitor control of the CCP* by scheduled testing or observations.

- Principle 5: *Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control* or is moving out of control.

- Principle 6: *Establish procedures for verification to confirm that the HACCP system is working effectively*; this should also include validation and review activities.

- Principle 7: *Establish documentation concerning all procedures and records appropriate to these principles and their application.*

These principles of a HACCP system guide food organizations towards respecting all rules necessary in obtaining quality products and continuously improving their performances (both organisational and safety). These principles have a

In this context, quality in the food industry does not refer only to the end-product, but also means process hygiene (without being limited to technological flow) (Rabontiu, 2010).

Nowadays, HACCP has become the main reference for international food safety. Its importance is highlighted, for example, in the European Union, where systems based on HACCP principles are mandatory required to be implemented for all food operators involved in a stage of production, processing and distribution of food products, except for primary production. Thus, the HACCP principles have been integrated into the EC Regulation no 852/2004 on Food Hygiene and also in animal feed legislation.

It is recommended for food companies to use HACCP systems in parallel other good practices regarding production, traceability and hygiene which forms the necessary elements in sustaining food safety, alongside with Quality Management Systems. This involves a further recognition of the importance of food safety management that resulted in the development of International Standard ISO 22000. This standard combines the quality assurance requirements found in ISO 9000 (Quality management systems) and the food safety focused components found in a HACCP plan (Stanley et al, 2011).

The International Organization for Standardization (ISO) is an independent, non-governmental organization, having more than 160 members from different countries around the globe, its main role resuming to the establishment of multiple specifications for products, services and systems, in order to ensure quality, safety and efficiency. These specifications result as an instrument in facilitating international trade.

According to the latest version of ISO 22000 standard (Food safety management systems - Requirements for any organization in the food chain), that was issued in 2018, and that will slowly take the place of ISO 22000:2015, the adoption of a food safety management system (FSMS) is a strategic decision for an organization that can help to improve its overall performance in food safety. bringing potential benefits like:

- the ability to consistently provide safe foods and products and services that meet customer and applicable statutory and regulatory requirements;
- addressing risks associated with its objectives;
- the ability to demonstrate conformity to specified FSMS requirements.

ISO 22000:2018 standard represents the most important ISO material regarding food safety, that promotes process approaches, Plan-Do-Check-Act (PDCA) cycles and risk-based strategies. In order to incorporate valuable information from HACCP principles the 2018 version of ISO 22000 answers a series of questions like: what is an occurrence of contamination? What do an “acceptable hazard level” and a “significant hazard” mean?

But despite HACCP control systems, ISO 22000:2018 is a voluntary standard, that intends to include sufficient applications in order to provide the mandatory quality guarantees required by regulations, through HACCP and others, by establishing common terminology that can be used from one country to another, in order contribute to its main objectives: providing safe food products to consumers and facilitating international trade. Moreover, the standard focuses in harmonizing control measures and definitions like operational prerequisite programs (OPRPs), critical control points (CCPs). Mainly, for an organisation to grow in terms of food safety standards, it must focus on multiple layers, each having different implications (mandatory or optional) and each being relevant for the other (fig no. 1).

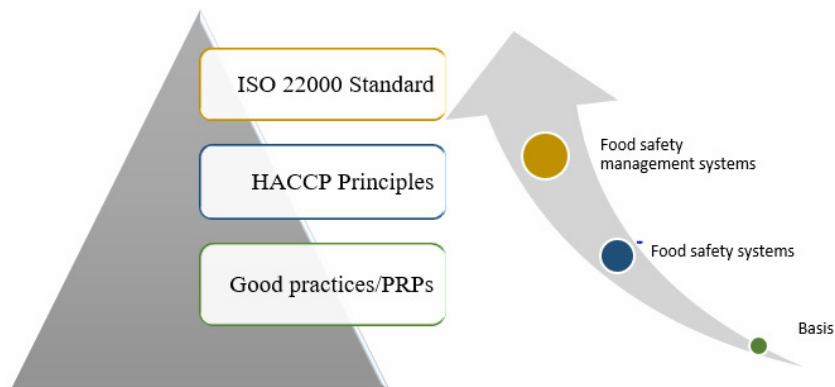


Fig. no. 1 ISO 22000 pyramid – main structure for food companies

Source: own source

Thus, the development of a sustainable global food market (from an economic, social and ethical point of view) is based on a long-term relationship between industrial production and consumption needs, taking into consideration safety and preventive measures that can be easily harmonized through mandatory standards and voluntarily guarantees, which represent today main quality indicators in terms of food safety management.

2. Romania's organic food market – food safety and the organic food industry

An organic food product, as the main element of the organic food market, is generally positioned as a proceeding of classic food products (in terms of added value to the food sector) and not as a distinct food product. In other words, organic food completes and enriches the concept of "quality food products" in its classical sense; therefore a "conventional" (prescribed) characteristic is overlapped by superior quality characteristics that add environmental performance (Olaru, 2005).

In this context, organic markets tend to be considered superior markets taking into account the requirements imposed by the organic food legislation, while its products can be considered quality products as their characteristics are constantly kept under control by specialized certification bodies.

Different studies highlight that only in USA an average of 76 million diseases, 325.000 hospitalizations and 5.000 deaths per year are caused by food related disease (Cooperhouse et al, 2004), as more than 200 known diseases are transmitted by different viruses, bacteria, metals or toxins throughout food.

In this context, an efficient but strict monitoring process can represent an important tool in the food industry, where hazards and food contamination risks can be identified on all production, processing or commercial chains. Thus, food safety represents a vital component for any modern food company as organizations along the food chain need to demonstrate their ability to ensure and keep under control possible dangers that can influence the end result of food consumption.

Starting with the food safety managed systems that set minimum and mandatory requirements for safety performance, the food industry has continued to develop the safety component, taking extending the notion of safety to multiple levels: environment, animal welfare, clean ingredients, non-GMO products, in other words the organic food industry.

From a chemical point of view, organic farming enhances the food safety because of three prominent reasons (Gupta, 2017):

- lower nitrogen application (which reduce nitrate concentrations);
- avoidance of pesticide use (which results in virtually no pesticide residues);
- no use of chemical fertilizers (to ensure low concentrations of chemical

residues).

Taking into consideration that HACCP principles have been transposed and implemented by multiple regional legislations, in the context of organic farming expansion, it can be acknowledged that some countries have the baseline instruments so that food producers, processors and suppliers can monitor and keep under control their safety performance, in order to be able to adopt organic compliance in the conversion period.

As an example, the European Union has rapidly embraced the Codex Alimentarius guidelines, prompting them throughout legislation on food safety subjects, one of the most important acts in this domain being the Council Directive 93/43/EEC on the Hygiene of Food stuffs, that sets mandatory directives regarding the implementation of HACCP principles. From this point of view, all EU countries must adapt by transposing the guidelines into their national legislation.

For example, upon acceding the European Union, Romania, as an eastern European country has aligned with the European rules in force, the number one priority for all food organizations being to ensure safety for their products, without compromising the food chain. According to the national Romanian law this can be done throughout implementing and certifying a Food Safety Management System. At a deeper analysis, organic food principles can be considered similar to HACCP plans, as both require a well-done documentation and analyses the production/processing process, step by step.

In Romania, more than 8000 food organisations activate under an organic label. Certainly, all companies must apply both organic and food safety legislation, in terms of production, processing distribution, but not all of them use HACCP as an instrument that integrates the organic requirements in the hazard control processes. Therefore, by analysing multiple HACCP documentations of Romanian food producers, a set of good practices have been identified:

- an HACCP plan can be used in outlining procedures that monitor the risk of mixture between organic and non-organic materials, including non-approved ingredients or prohibited substances that can compromise the organic quality of the end food product;
- for processed food, an HACCP plan will include attributes like: minimum or maximum processing temperature, minimum or maximum processing time period, characteristics that are required in order to eliminate and keep under control harmful bacteria or microbes;
- for a better understanding of the food production process, organic monitoring procedures must be implemented in order for all employees and other interested parties to easily identify each process, what it involves, where it takes place, the timing of the activities, the main method of production and the responsible person for the specific process;
- an HACCP plan must provide a well-documented procedure regarding disposal or reprocessing of a certain food product in case the organic performance is not achieved (for example, in terms of cooking temperature);
- HACCP can be used as an assessment plan for external factors in order to create and maintain a list of inputs used by the production unit that can influence organic quality: fertilizers, insecticides, rodenticides, herbicides, technological additives and auxiliaries used, feed additives and supplements, animal treatment products, seeds and vegetative propagation material, hygienic substances;
- HACCP can be used as an ingredient assessment plan in the organic food industry, so that each food production process will have a complex substance list as an input, that contains multiple information regarding the product, information that is mandatory for organic food labelling;
- HACCP can be a useful instrument in term of traceability of food products, its

record keeping and documentation system establishing all stages of the food circuit. This is a very important aspect for the organic food industry as complex systems for collecting logistic chain information can involve higher costs and by using HACCP documentation system in this context the organisation can able to identify all sources that provided a food component or that provided multiple ingredients;

Generally speaking, the main objective and outcome of HACCP systems represent food safety while organic food industry focuses on the compliance with the organic legislation and standards

But, for an organic producer to streamline the production process and keep under control multiple risks that appear in the organic sector, HACCP should be used as an important tool for implementing and maintaining organic standards and the system's objectives should not be limited to food safety issues, as food safety represent a main component/principle of organic agriculture.

Thus, HACCP offers a number of advantages to the food industry, and especially to the organic processor because the system (Cooperhouse et al, 2004):

- Focuses on identifying and preventing hazards from contaminating food;
- Has scientific based approaches;
- Permits more efficient and effective government oversight, primarily because the recordkeeping allows investigators to see how well a company is complying with food safety laws over a period rather than how well it is doing on any given day
- Places responsibility for ensuring food safety appropriately on the food manufacturer or distributor (Figure no 2).
- Helps food companies compete more effectively in the world market
- Reduces barriers to international trade

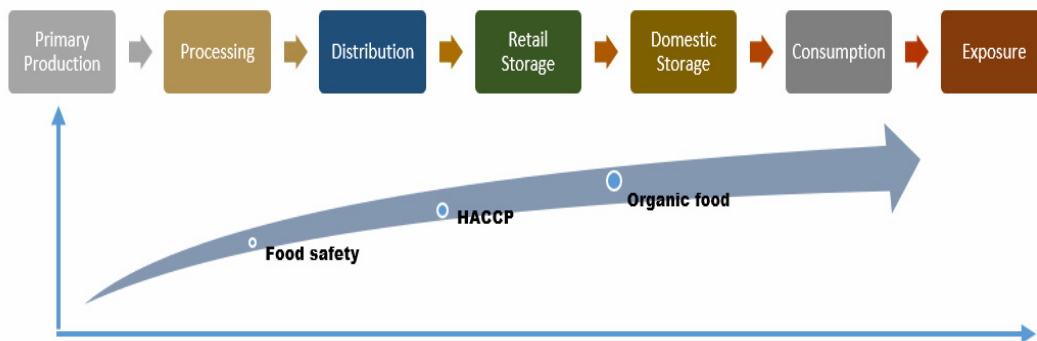


Fig. no. 2 Modern food logistics chain - A modern overview

Source: own source

Quality throughout an organic performance and safety in food should be analysed and considered together, as their main objectives share multiple common principles, especially from a management perspective.

Conclusions

Developing a food safety management system that can prevent potential risks and threats as well as positively impact the business processes must be a key objective of each organization that operates in the food chain.

Speaking of today's economic diversity, methods and materials will differ when analysing organic and nonorganic operations, but the main outcome is the same: developing a

systematic approach that can easily control all processes and maintain traceability of the logistic system. Thus, organic agriculture goes hand in hand with systematic preventive approaches used in the food industry, like HACCP.

In Romania, following multiple regional examples, the national food industry legislation has introduced as mandatory the application of food safety management system based on risk assessment and prevention principles - HACCP system, for all units involved in the food chain (from primary producers to the sale process - transportation, storage and trade in food). Thus, it can be said that a niche market that clearly addresses the innocuity and quality of food is that of organic or premium products. Even if organic agriculture has recently become a nice market in Romania (officially regulated with the role of EU membership) the national producers have adopted organic principles and with the help of HACCP systems a series of good practices have been identified and analysed.

Nevertheless, safe food represents quality food from multiple points of view, and by carefully implementing a management program based on HACCP principles, an organic food producer can control both safe production conditions and compliance with national organic standards.

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