

## QUALITY MANAGEMENT FOR SAFETY FOOD AND HEALTHY CONSUMERS

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### Abstract

*The aim of this paper is to review some literature data with respect to quality management for a safety food and healthy consumers. The foodstuffs' quality is a particular concept, due to the food consumption at its first use, and to the increased exigencies to ensure their nutritional, hygienically, or toxicological quality. The nutritional approach of foodstuffs' quality might be facile as long the consumers are well-informed about the composition and nutritional value of each foodstuff type, these ones having free-will to choose the desired product. The hygienically and toxicological approach of foodstuffs' quality is complex and involve qualified staff for food quality control. In addition to human resources, this approach could also require financial resources in order to use specific methods for biological or toxicological risks assessment.*

*In order to ensure a proper quality of processed foods, HACCP system was proposed and applied in many countries as a systematic preventive approach, and an efficient path to design measurements to reduce hazards to a safety level. Such a certification gives an extra value to the foodstuffs, and could open and simplify many commercial relationships, increasing the trust between participants.*

*The commercial relationships between manufacturers and consumers could be sometimes conflicting, but may become a partnership in conditions of adequate profits to the quality of offered foodstuffs, and safety foodstuffs at accessible prices. In Romania, the main organization with specific directions in consumers' protection is the National Authority for Consumers Protections. Besides this, the National Sanitary Veterinary and Food Safety Authority perfectly meet all the objectives in food safety and quality strategy. In addition, the activities of subordinated laboratories offer suitable solutions in food and feed quality control, and laboratory diagnosis.*

**Keywords:** foodstuffs quality, standards, certification, consumers' protection

### INTRODUCTION

The *foodstuffs' quality management* is a dynamic concept, with a classical approach in past time, particularly based on foodstuffs' quality checking by consumers, or their trust in manufacturers' competence or reputation. Nowadays, the responsibility of foodstuffs' quality is assumed by all processing units in terms of continuous improvement. More than that, in a competitive society as ours, the foodstuffs' quality becomes a key factor for consumers' contentedness in terms of safety food consuming.

The aim of this paper is to review some literature data with respect to quality management for a safety food and healthy consumers. From the very beginning, the quality concept was presented, with special reference to foodstuffs' quality. There are defined and presented *the quality manual* – as a quality management enforcement tool in foodstuffs factories, *the standardization work* in foodstuffs industry and *the consumer protection* by illegal practices.

### “QUALITY” – A COMPLEX AND A VERY DYNAMIC CONCEPT

Throughout the time, “*quality*” was defined as “*a product competence to be used*” (13), “*the conformity with specifications*” (18), or “*as a product ability to fit to customers*”

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*standards, to their needs, and to their anticipated aspirations”* (6).

“Quality” concept might be differently approached from the customers’ perspective, the manufacturers’, or the product’s itself. In the customer terms, a *quality product* is one that could be used and meet most of customer requirements and expectations. In the manufacturer terms, a *quality product* is one that conforms to specifications and standards, and which is free from defects. In the product terms, *quality* meets when the product itself has something in addition to similar ones, which gives it an added value (23).

Nowadays, the most common approach in quality defining is given by its “*customer focusing*”, which also represents a guiding principle of Total Quality Management (27,28).

However, the foodstuffs’ quality is a particular concept, due to the food consumption at its first use, and to the increased exigencies to ensure their nutritional, hygienically, or toxicological quality. The nutritional approach of foodstuffs’ quality might be facile as long the consumers are well-informed about the composition and nutritional value of each foodstuff type, these ones having free-will to choose the desired product. The hygienically and toxicological approach of foodstuffs’ quality is complex and involve qualified staff for food quality control. In addition to human resources, this approach could also require financial resources in order to use specific methods for biological or toxicological risks assessment. *In microbiological risk terms*, various germs may primarily contaminate raw materials, their technological flow, or to be at higher levels in final products as a result of multiplication during their shelf-time (21,30). Foodstuffs may cause both *infectious diseases of food origin*, and *food toxic-infections*. Tuberculosis, brucellosis, or typhoid fever are infectious diseases which may occur in humans as a result of food consumption with not necessary loads of germs; therefore, and germs multiplication is not required to cause disease conditions. Instead, food toxic-infections such as salmonellas, botulism, or staphylococcal ones occur only in loads of germs conditions (20). Although the terms

may seem alike and induce misunderstanding, *food toxic-infection* is a pathological condition caused by bacterial toxins, whilst *food intoxication* is a pathological condition caused by toxic chemical agents ingested via food (25). Various chemicals (antibiotics, hormones, pesticides, heavy metals, detergents etc.) may contaminate foodstuffs due to their presence in water and fodders, failure to comply with withdrawal times for drug residues avoidance, or by their direct taking from floors or other hygienized places or equipments (10-12,29). Both for *food toxic-infections* and *food intoxications*, a great attention is granted to illnesses increased susceptibility of young consumers, partially due to their increased intestinal absorption.

Foodstuffs’ sale markets are increasingly more saturated at the moment, and consumers become increasingly demanding. As a natural consequence, assortments were created. Nevertheless, the derived products have to respect the same quality rules as the basic products. In foodstuffs industry, HACCP (*Hazard Analysis Critical Control Points*) system, organized on international standards’ principles for quality ensuring, authorize the analysis of potential hazards which may occur either at raw material obtaining and processing, or at handling and storage of processed products, and the identification of suitable control steps (7,8,14,15,17). Critical control points were identified on the technological flow of all processed foods, by which the observed hazards are kept under control. Various tolerance values or critical limits are set in according to specific types of risk, and specific corrective measures may be taken when a critical point is not under control. All the performed records are kept in so-called “*HACCP documentation*”, which is always checked in order to confirm its proper functioning (Council Directive 93/43/1993).

A current issue is represented by financial quality approach. It is important that a possible tendency of food manufacturers to produce more efficient with costs saving to be reflected in a lower shelf cost. Therefore, consumers would appreciate if they bought a cheaper foodstuff at a higher quality. In the same time, it is important that all the manufactured saved costs do not correspond

to a quality disadvantage, and all the savings to be in terms of their investment in a continuous improvement of manufacturing process (24).

### HOW TO MANAGE THE “QUALITY” IN FOODSTUFFS PRODUCTION?

Juran, 2002 defines quality management as *quality planning, quality control, and quality improvement*. Responsibility for quality management is at all the levels of organization in every food processing unit; although the coordinating role is at top management, for performing is needed an involvement of all employees (SR EN ISO 8402:1994).

The maintaining of any manufacturer on food goods market may be consolidated due to a *quality system* introduction. This represents an organizational structure which includes all the procedures and resources required by quality management and considers both *quality control* at food production level, and *quality assurance* at the level of standards compliance by the offered products. In order to achieve *the total quality*, Maxim, 2005 suggests an adjustment of foodstuffs offering to customer requirements, an optimum quality price ratio, and the orientation towards excellence in business – quality first, everything must be done right from the first time, with “*zero defects*”.

### QUALITY MANUAL – AN IMPLEMENTING TOOL OF QUALITY MANAGEMENT

*Quality manual* represents an official document of each food processing unit, which presents the adopted policy in quality area, and it serves as a reference both in quality system implementation and maintaining. In the same time, it represents a technological documentation of products manufacture, and it serves as a communication tool with employees, customers, and distributors, defines responsibilities of each sector of production, and it is an important document both for internal and external quality audit (5,19).

The need for a quality manual is lower when the processing foodstuffs traits are reduced. In large food processing units could

be more quality manuals (one for marketing, another one for production etc.), as well as the same food processing unit could have a quality manual for internal use, and another one for external purposes. The first one is called – “*The quality management manual*”, and contains all the information at which the customers or partners access is banned. The one for external purposes is called – “*The quality assurance manual*”, and contains all the information for customers or other stakeholders, being considered as a presentation manual (3).

The globalization perspective of food markets convinced top managers on the need of quality management system implementation, and of the conformity certificate obtaining, according to SR EN ISO 9001:2000 or SR EN ISO 9001:2008. The certification represents an activity by which a third part provides in writing that a product is in accordance with the specified requirements. It represents also an advantage for manufacturer, customer or distributor. This adds an extra value to the foodstuff, and could open and simplify many commercial relationships (1). An already mentioned example is HACCP certification, aimed for all the companies which produce and sell foodstuffs, and equipments for food industry (2).

### THE STANDARDIZATION ACTIVITY IN FOODSTUFF INDUSTRY

In the context of foodstuffs free movement in the Unique European market, *standardization* represents an appropriate way to a technological harmonization, considering the increased number of raw materials and various final processing products which could be done.

Standardization is supported by documents called “*standards*”, those with interest in food industry being the following:

- *the product standard*, which specify those conditions which a foodstuff must comply in order to be delivered on the market and optimal for human consumption;
- *the terminology standard*, which specify terms, gives definitions, and occasionally explanatory notes, illustrations, examples;

- *the standard of trials*, which specify trials and working methods for foodstuffs analysis, occasionally with sampling stipulations, statistical methods etc. (3).

The procedures developed in Romania in order to become a European Union's member took into consideration the adjustment of national standards at EN and/or ISO regulations. The adjustment activity was made according to SR 10000/8-91, being identified Romanian standards which were equivalent to international ones (potential technical deviations being insignificant), Romanian standards identical to international ones (labeled with SR EN or SR ISO), and Romanian standards non-equivalent to international ones (labeled with NEQ).

Standards are important because they could defend the consumers' interests by controlling the variety of the same product, reducing the uncertainty on the market, or commercial barriers elimination (3).

## QUALITY'S CONSUMERS AND THEIR RIGHTS OF SUPPORT AND PROTECTION

Manufacturers provide different foodstuffs on the market, and using various marketing techniques, promote and persuade customers by their products' quality. It could be possible to consider that manufacturers are very well informed about the foodstuffs they offer, whilst the majority of consumers are less informed and have no means for quality assessing. Although it cannot be generalized, as a consequence of this fact, some manufacturers could manipulate the quality price ratio in a way that with reduced costs of production, and frequently associated with low-class products, to obtain large returns (22).

Under these circumstances, two factors related to consumers contribute on manufacturers maintaining on free-market. The first one refers at the customers' education and information levels; when these are subtracted, manufacturers who offer low quality foodstuffs, or even worse, substituted, could be in advantage. The second one refer to the customers' level of incomes: when families' incomes are above the average, it is possible an increasing level of foodstuffs purchasing,

frequently of better quality, and vice versa. Therefore, the commercial relationships between manufacturers and consumers could be sometimes conflicting, but may become a partnership in conditions of adequate profits to the quality of offered foodstuffs, and safety foodstuffs at accessible prices.

In Romania, the main organization with specific directions in consumers' protection is the National Authority for Consumers Protections. Besides this, the National Sanitary Veterinary and Food Safety Authority perfectly meet all the objectives in food safety and quality strategy. In addition, the activities of its subordinated laboratories offer suitable solutions in food and feed quality control, and laboratory diagnosis.

## CONCLUSIONS

The modern concept of *foodstuffs' quality* includes all the nutritional, hygienically, toxicological, and technological criteria. We are living in a concurential era, and a *financial quality approach* is suitable in the context of a possible tendency of food manufacturers to produce with cost savings, often associated with low-quality products.

In order to ensure a proper quality of processed foods, HACCP system was proposed and applied in many countries as a systematic preventive approach, and an efficient path to design measurements to reduce hazards to a safe level. Such a certification gives an extra value to the obtained foodstuffs, and could open and simplify many commercial relationships, increasing the trust between participants.

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