

SUMMARY

Of the doctoral thesis with the title

"RESEARCH ON THE MANAGEMENT OF THE QUALITY ASSURANCE OF BAKERY PRODUCTS ACCORDING TO THE EU STANDARDS REGULATION - A CASE STUDY IN CONSTANȚA COUNTY"

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The quality of any product is in a continuous process of improvement and it can be defined by perpetual perfection. The most important vectors that provide these features are: technical and scientific evolution, growing demands of all consumers and fierce competition. The food industry must increasingly focus on quality assurance but also on the implementation of a HACCP system that is used as a coherent method of finding, estimating, checking and controlling food risks.

Thesis entitled "RESEARCH ON THE MANAGEMENT OF THE QUALITY ASSURANCE OF BAKERY PRODUCTS ACCORDING TO THE EU STANDARDS - A CASE STUDY IN CONSTANTA COUNTY" presents the synthesis of important steps necessary to ensure the quality and safety of bakery products and optimization of manufacturing in CC "Dobre și Fiii" L.T.D. in Constanta, with the aim of selling products with high degree of safety and quality.

To this aim, the objectives are as follows:

- development, building on existing information in the specialized literature, of a study outlining the current state of technology of achieving bakery products and the measures taken to increase their quality;
- creating procedures for assessing customer satisfaction and handling complaints;
- establishing an optimum system for listing the results of the analyses, to provide safety in the production process and assuring of resulting products;
- improving of the HACCP plan implemented in the C.C. "Dobre și Fiii" L.T.D. by analyzing the risks and identifying the Critical Control Points and confirming the known ones.

The thesis is structured in three parts, as follows:

- The first part presents the documentary study and current state of knowledge regarding the issues addressed in the paper and includes Chapter I.
- The second part presents the objectives and methods used to achieve the research and includes Chapters II and III.
- The third part presents the results acquired after the research and includes Chapters IV and V.

Chapter I is entitled "QUALITY OF FOOD PRODUCTS" and presents a short history and the current stage of knowledge related to the food quality issue, both at the international level, at the European Union level as well as at the national level. This chapter provides a brief overview of the authorities that have as their objective the food risk assessment. Both European and international diplomacy protect health at every stage of the production process up to the final consumer. Prevention of food contamination is supervised, as well as promoting food hygiene and documentation on the health and well-being of plants and animals. There is a great interest regarding food safety. The development of society can no longer be simplistically conceived, for it is based on the quality and health of products. At the development of the society there is an emphasis on food quality and safety. The issue of general interest in modern societies is also to ensure that citizens have access to food that is both qualitatively and quantitatively secure. European Union directives dictate food labeling so that all citizens can benefit from complete and accurate documentation regarding food composition, allergenicity and nutritional value. One of the benefits of food quality is to stop generating and prevent repeating processes that reduce the quality of products and services.

Ensuring food security is not a problem for one country, it is an international problem because many of the products we use come from countries outside the union. The European Union is a big market where both food and non-food products can be freely marketed on its territory. The European Union defends health throughout the food production process - from the production farm up to the citizen; thus avoiding food contamination, promoting food hygiene and informing citizens about the quality of life of plants and animals. There is an increasing awareness of more and more citizens who become interested not only in the quality of products but also where the consumed products come from. Therefore it is necessary to remove all defects or weaknesses from the entire production process circuit traversed by all products. Addressing emerging shortcomings requires more research and management of the resources and conditions

that are used in the production process. Increasing food safety and quality must lead to the responsibility of all those involved, from producers to consumers.

Chapter II is entitled "THEORETICAL AND METHODOLOGICAL ASPECTS ON THE MANAGERIAL QUALITY CONTROL OF PRODUCTS AND CONSUMER PROTECTION" presents the theoretical and methodological aspects of managerial research on product quality and consumer protection. Quality is an important factor and a basic indicator of any trading company. The quality level of products is directly influenced by production costs, staff training levels and the climate within the company.

The emergence of a wide range of similar products puts the buyer in difficulty, wondering if the product will meet its requirements. For this reason, companies conducting studies on the quality of products of the same quality, which result from quality / price scores, were set up to help buyers. Studies relate to reliability, aesthetics, durability, technical performance, maintenance costs, service activity, etc. More and more companies are seriously dealing the issue of product quality and consumer safety. Within companies, good practices are developed and introduced to ensure a high level of product safety. Companies continuously improve their internal quality systems through advanced technologies and new ways of working.

But, despite these measures, accidents occur where non-conforming products reach the beneficiaries. Identified, non-compliant products should be removed from the market. The ability of a company to track its products in the supply system and to withdraw those that are not in compliance with both the consumer and the stores is also very important.

Recommendations in the good business practice and European food safety requirements are indices to promote a traceability process for products and locations, sharing information on product location, labeling, etc. These recommendations provide directions for an effective traceability process, product collection and withdrawal as well as an effective management of incidents. It is important that all business environments (importers, exporters, wholesalers etc.) work together and implement business processes in line with established practice to comply with legal requirements and to deliver high quality and safety standards of products for consumers.

Quality analysis is an important activity within the quality assurance cycle within an enterprise. Quality analysis activity involves the analysis of an inadequate current state in order to identify the modalities of intervention in order to achieve a higher quality of the product. Solving both problems involves going through a universal flow: elementary information

(symptoms) - analysis - diagnosis - developing several solutions - choosing the optimal solution - applying in practice - final adjustment actions. The quality of a product in general is based on a set of characteristics that can be observed, determined, measured, tried, compared to a standard.

Product quality is the ultimate expression of the quality of the production processes and applied technologies, that impart essential attributes to products, making them fit for use for the purpose for which they were created.

In this chapter were also debated the general methods of quality analysis, the ones most used and applicable in the framework of quality assurance. At the same time, the indicators used to monitor the quality of bakery products were also specified.

Chapter III is entitled "THE POLICY REGARDING QUALITY ASSURANCE OF PRODUCTS AND CONSUMER PROTECTION IN ROMANIA". The chapter outlines product quality assurance policy and consumer awareness of their food security rights. All consumers have the following rights regarding food quality and safety:

- Safety in purchasing products or performing services that could harm the health or safety of life, or damage its interests;
- Correct, accurate and complete documentation of the properties and characteristics of products and services so that the decisions consumers take, suit their needs;
- All consumers have access to any market that provides them with the most complete and comprehensive variety of quality services and products from the point of view of consumer safety;
- All consumers have the right to be compensated, under the law in force, if they have suffered damage from purchased products and services that are of questionable quality;
- All consumers have the right to set up consumer protection organizations or to be partners in these organizations, to protect their interests.

Consumer protection encompasses specialized activities aimed at protecting the consumer of services traded through public offering networks or through the national market. Activities need to be set up from the philosophy of a harmonious human evolution through the practice of consumer protection policies. The normative acts that regulate the activity in the field are presented.

Withal the admission in the European Union and alignment with the current European rules, the number one priority for any agri-food organization is to ensure the safety of its

products has not been compromised within the food chain, and this can be done by implementing and certifying the Food Safety Management System. Each organization must demonstrate the ability to control food safety risks in order to deliver safe final products that meet the food safety requirements agreed by consumers and regulatory authorities in the field. Manufacturing, packaging, moving goods, storing and selling food signifies high-risk processes for consumers. The growing tendency of the food market to keep strict control over all economic agents with the goal of giving all consumers final products of remarkable quality but also with the certainty that they are hygienically safe has led to the establishment of the HACCP system (Hazard analysis of critical control points). The internationally recognized system is based on a careful examination of the production process and demonstrates that all risks to hygiene and food quality are recognized, estimated and controlled. This system recognizes the dangers, it keeps under control the critical points regarding the processes in which the quality of food can be compromised. The system should be applied to the entire production chain, from plant cultivation to animal breeding and ending with a final quality product which is to be purchased by the consumer.

The HACCP system is known as an approach in obtaining good quality products, in ensuring hygiene and production ways that will lead to safe food products. To find and recognize critical control points, HACCP has developed and set up control procedures.

Chapter IV is entitled **"THE GENERAL PRESENTATION OF C.C. "DOBRE ȘI FIII" L.T.D. – A CASE STUDY"** and contains a brief history of the bakery producer as well as presenting the range of prepared products.

Chapter V **"RESEARCH ON THE MANAGEMENT OF QUALITY ASSURANCE OF BAKERY PRODUCTS IN C.C. "DOBRE AND FIII" L.T.D."** details the 12 stages of HACCP implementation for bakery products. The Flow Diagram for White Rustic Bread is presented, establishing the critical control points. The dangers that can arise in obtaining white bread are assessed and analyzed. The decision tree for identified critical points is presented.

The HACCP plan for white bread was drawn up. The critical control points are found according to the performed examination. For Critical Points, control limits are set. These can be measured and based on actual records. At each critical point, a verification system is set up to control them. Critical limitations are introduced in procedures.

In white bread the critical points to be inspected fit into the production flow. The objectives of these inspections are to remove and mitigate possible hazards and opportunities for

them. The word „critic” is an important term in defining HACCP. The decision tree and the determination of critical points are used according to the Codex Alimentarius.

In order to detect the opinions and satisfaction of the clients of C.C. "Dobre și Fiii " L.T.D. regarding the products manufactured and marketed by the economic agent, a questionnaire was established. It was applied to a group of 120 people of different ages: from under 18s to over 60s. The results of the questionnaire were represented in graphic forms and analyzed. There have been important and interesting things discovered related to meeting consumer requirements.

Analyzing the results, we noticed that respondents, regardless of age, sex, occupation, noticed that fresh bread has a wet and slightly sticky core, and the storage time is very short because the products quickly mold.

The results confirm that cooling is a critical control point. The indicators related to the technological cooling operation were analyzed: air temperature, air humidity, cooling time. The first two indicators have normal values, the only indicator whose value needed change was the cooling time. For this purpose, the cooling strip was re-designed, changing its length. In order to do this, the cooling and packing compartments were resized by giving up a partition made of lightweight materials. At the same time, the length of the cooling band was increased, the circuit getting a sinuous shape from the output of the furnace up until packing and storage / delivery. In the first part of the circuit, the cooling strip passes over the tunnel furnace, where the air is hot and humid, then gradually reaches the packing and delivery area where, with open space, the air is ventilated and has much lower temperature and humidity.

After the bread cooling circuit was modified, there was an increase in the sales of the white rustic bread product and thus in the fiscal value. The HACCP system has been modified following its reassessment. Cooling has remained a critical point of control. Modifying the cooling circuit has removed the "wet and sticky core" defect for the moment, but periodic monitoring of the process is necessary.

Implementation of HACCP is of major importance in a bakery factory because, since critical control points are identified and the values to be monitored are determined and strictly fixed, the final quality of the products can be controlled. Once again the importance and usefulness of HACCP implementation system is confirmed.