

11th International Congress on Engineering and Food (ICEF11)

Environmental & food safety management systems, according to ISO 14001 & ISO 22000 in fish processing plants: experiences, critical factors & possible future strategies

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Abstract

In order to keep themselves competitive and to protect their brands and reputation, the fish processing plants need to manage risks, show corporate responsibilities and abide by the demands of their clients. In this context the ISO 22000 proves to be an important tool for food safety management. Riding on ISO 14001 in reference to environmental management, it could contribute to the sustainable development of food industries activities. The aim of this paper was to analyze the fishing industry, a sector of strategic importance to the food safety of the entire population; the impact and synergism of the simultaneous adoption of these standards, proposing suggestions to minimize critical factors singled out for more efficient implementation of the said standards. The adopted methodology was multiple case studies, having analyzed plants located in Portugal and Spain with integrated management systems (IMS) already implanted. The results showed that all of the five analyzed plants have set quality and food safety management systems, however only three of them have EMS (Environmental Management Systems). These companies showed good practices aimed at the preservation of the environment as opposed to the plants that did not have EMS. It was observed a greater gain in time with simultaneous implementation. As benefits of the adoption of the IMS the plants identified an increase in sales and satisfaction on the part of their employees. Regarding the critical factors, the analyzed plants pointed to: “interpretation of the standards”, “the empowerment and valuing of people”, and “industry sensitivity towards the implantation of the IMS”. Considering the importance of standards ISO 14001 and ISO 22000, and the results observed, it can be concluded that the integrated implementation of these standards allied to the measures for overcoming the critical factors presents great potential for the increase of competitiveness of fish processing plants.

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Keywords: ISO 14001; ISO 22000; environmental management; management of food safety; integrated management system.

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1. Introduction

In order to be competitive the fish production chain should consider the new market concepts which demand attention to the standards of international quality, food safety and environmental sustainability. These new requirements must, therefore, be part of the strategic evaluation of the sector, for the management of its own viable capabilities and survival of their undertaking. (MEDEIROS, 2003).

According to FAO (2009), the quality of food products is of the utmost importance for the industries of this sector and also for the public health authorities. It was possible to estimate that in The United States of America there are possibly more than 80 million cases of ``illnesses`` originating from food intake and the cost of these illnesses yearly is very high indeed. The economic losses due to deterioration are seldom quantified but it is presumed to be that one quarter of the world's food distribution is lost due to microbial activity (IVANKIU, 2008).

Added to this, there is an international tendency on the part of the consumers to worry not only with the quality of the products but also with the responsibility that the producers have in the elaboration of their products, paying more for products that come out of companies which do not cause environmental harm (SOBRAL et al., 2004). The management of the environment and that of food safety fits very well in this new concept of worldly society. Companies search for a continuous betterment of their products in that which refers to quality, to sustainable development and to the reduction of negative impacts, in order to have a positive image in the eyes of their product's consumers.

The objective of this work was to analyze, in the fishing industry the strategic importance of food safety for the entire population of the planet and the synergy and impact of simultaneous adoption of norms ISO 2200 or IFS 5 (food safety) and ISO 14001 (environment) proposing suggestions to minimize singled out critical factors for a more efficient implementation of the above mentioned norms.

2. Materials & Methods

Five seafood processing plants located in the Iberian Peninsula participated in the study. They were chosen for their prominence in the fishing industry, their certifications, and their reputation for remarkable performance.

The companies were visited between June and October 2009. During the visits, a variety of managers were interviewed, including administrative, human resources, quality management, supply, and trade. Also, interviews with employees who were in direct contact with food processing were included.

The questionnaires that were used throughout the process were adapted from the model "Benchmarking and the Practical Good" from the Institute of Support to Small and Medium Business and to Innovation (IAPMEI, 2009). Included in the questionnaire were questions concerning social responsibility, ethics, equality, social inclusion, basic human rights, child labor, health and security, salary and wages, forced and obligatory work, and food safety.

3. Results & Discussion

All the companies analyzed have systems for management of food quality and safety implemented following norms ISO 9001, ISO 22000, or IFS 5, as a strategy for the differentiating of their products by innovative means which include food quality aspects and food safety. However, only three out of five of the analyzed companies have implemented and certified environmental management systems according to the requisites of norm ISO 14001.

It has been noted in this research that only the companies which implemented environmental management systems have good environmental practices which aim at minimizing and controlling the impact of their activities on the environment. Amongst these one can emphasize the utilization of fish residue in the manufacturing of biodiesel; the sale of codfish bones to the pharmaceutical industry; the

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