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ISO 22000:2005 AND ISO 9001:2008 IN THE FOOD INDUSTRY MANAGEMENT: INTEGRATION OR REPLACEMENT? (REVIEW PAPER)

Summary: The ISO 22000 standard is a relatively new approach to the EU markets. Nowadays popularity of that system is rising among food sector companies. It unifies the requirements concerning food production. Its subject of interest and structure are very similar to the ISO 9001 standard. This article discusses if the above standards are complementing each other or if they are simply interchangeable.

Key words: ISO 22000:2005, compatibility, interactive communication, prerequisites programmes.

1. Introduction

Constant economic growth, especially in food sector, requires companies to adopt current standards. Companies which want to hold their market position start implementing ISO standards for external reasons such as European Union requirements as well as competitiveness on the market [12]. Nowadays, it is crucial for businesses to have a certificate of standard. That information ensures customers and business partners that all the products offered by the enterprise have the highest quality.

ISO 22000:2005 has been playing the significant role in the food sector for several years. It includes requirements concerning food safety. The system was developed by International Organization for Standardization as a result of cooperation of 14 countries with organizations such as Codex Alimentarius, Global Food Safety Initiative (GFSI), European Food Industry Organisation (CIAA). They wanted to unify requirements concerning food production in the whole area of food chain at the global level (from raw material to the final product). Pre-existing standards such as: Danish, Dutch, German or Irish were diverse in terms of structures and requirements. This resulted in significant problems. As the companies wanted to compare each other it was decided that various standards were supposed to be replaced with one – ISO 22000 to get clear requirements for food production process.

It is worth emphasizing that before ISO 22000:2005 was developed by International Organization for Standardization there had been a lot of discussion about it being an alternative system to ISO 9001:2008. The aim of this paper is to trace if these assumptions were right [14].

2. Materials and research methods

To present the primary branch standards of ISO 22000:2005 “Food safety management systems – Requirements for any organization in the food chain” were used. A family of ISO 2200 also includes:

- ISO/TS 22004 – “Food safety management systems – Guidance on the applications of ISO 22000:2005”,
- ISO/TS 22003 – “Food safety management systems – Requirements for authorities providing audit and certification of food safety management systems”,
- ISO/TS 22005:2006 – “Traceability in the feed and food chain – General principles and guidance for system design and development”,
- ISO 22002 – “Prerequisite programmes on food safety”,
- ISO 22001 – “Guidelines on the application of ISO 9001:2000 for the food and drink industry” [13].

The standard was designed for companies, no matter how big, that were a part of the food chain sector: ranging from agricultural producers, feed and food manufacturers, processors, food outlets and caterers, retailers, to service providers, transportation operators, storage providers, equipment manufacturers, biochemical manufacturers and packaging material manufacturers[1; 3; 10]. It is important to care about raw materials and production environment throughout the production and processing, and to introduce strict supervision of the operating and marketing food hygiene. Only such a strict control of all of the stages of production could ensure food safety management.

Standard ISO 22000:2005 is based on four main issues:

- Interactive communication – it is a reference issue which includes external and internal communication. It is important to ensure that all products are of good quality, safe and all relevant food safety hazards are identified and controlled at each step. Certainly a well-developed and implemented communication system will be the main basis of proper functioning. That is the attitude for the better exchange of information between staff, customers and suppliers and it will help to ensure the faster reaction in case of emergencies.
- PRP (prerequisite programmes) – those define basic conditions which have to be fulfilled to maintain a hygienic environment. The hygiene standards such as GHP, GMP, GAP, GTP should assure that. Furthermore they are the basis for the development of operational prerequisite programmes (o-PRP) [6; 7].
- HACCP principles and application steps developed by the Codex Alimentarius – they help to identify potential hazards. The main aim of HACCP plan is to

determine an appropriate CCP (critical control points) and define appropriate critical limits [5].

- System management – actually this is the most effective way of management of food safety systems which are designed, operated and updated within the overall management activities of the organization [4].

Arising from the content of standards are the basis for further analysis of the similarities and differences. They are the subject of research of following studies.

3. Results and discussion

3.1. Similarities and differences between ISO 22000:2005 and ISO 9001:2008

Structures of ISO 22000:2005 and ISO 9001:2008 are definitely similar. Both of them include eight chapters (Table 1). As shown in the table, the better part of requirements overlaps, because in each of the standards one can find a few guidelines:

- Management's involvement in company's affairs – creating policy and setting targets,
- Staff involvement in implementation of strategy and targets,
- Requirements for keeping documents and their supervision,
- Sustained upgrading of existing systems (conducting internal audits, corrective and preventive actions),
- Process approach,
- Conducting monitoring,
- Conducting detailed records,
- Creation of procedures and following them,
- Relying on verified information during the decision making process.

Both standards presented a similar approach to the fulfilment of the requirements and focused on continuous improvement by providing a permanent evaluation process (verification, monitoring, auditing).

Despite the similarities pointed in Table 1, one can also find differences between these standards. The first visible difference is the theme of standards (point 4). The main task of ISO 22000:2005 is to define requirements relating to food safety management and ISO 9001:2008 relates strictly to aspects included in quality management [11]. The main differences are evidently visible in section 7 of the norms. Standard ISO 22000 is mainly based on the HACCP principles, so it is very often called "HACCP standard". In addition, it regulates the majority of business processes from the point of view of food safety – it requires to analyze the risk at the planning stage and supervises the critical control points. Furthermore, it keeps a good internal and external communication thought in the food chain and it also refers to emergencies and critical situations. On the other hand, it does not relate to the results research analysis of customers satisfaction. Regulations concerning the process of customer contact and arrangements for broadly defined customer

Table 1. Comparison between ISO 22000:2005 and ISO 9001:2008

ISO 22000:2005	ISO 9001:2008
• Scope	• Scope
• Normative references	• Normative references
• Terms and definitions	• Terms and definitions
• Food safety management system	• Quality management system
• Management responsibility	• Management responsibility
• Resource management	• Resource management
• Planning and realization of safe products	• Product realization
– prerequisite programmes (PRPs),	– infrastructure, – work environment, – control of production and service provision, – preventive action, – preservation of product.
– preliminary steps to enable hazard analysis, – general – food safety team, – product characteristics, – intended use, – flow diagrams, process steps and control measures.	– design and development, – purchasing requirements, – determination of requirements related to the product.
– hazard analysis, – general, – hazard identification and determination of acceptable levels, – hazard assessment, – selection and assessment of control measures.	– design and development.
– establishing the operational prerequisite programmes (PRPs).	– design and development inputs.
– establishing the HACCP plan – HACCP plan, – identification of critical control points CCP, – determination of critical limits for critical control points CCP, – system for the monitoring CCP, – actions when monitoring results exceed critical limits, – updating of preliminary information and documents specifying the PRPs and the HACCP plan.	– design and development outputs, – control of production and service provision, – monitoring and measurement of processes, – control of nonconforming product, – control of documents.
• Validation, verification and improvement of the food safety management system	• Measurement, analysis and improvement

Source: based on the PN-EN ISO 22000:2006.

requirements are not specified in this standard. In fact ISO 9001:2008 is based on it and puts emphasis on increasing customers' satisfaction. Indeed, it is important to provide the product which could fulfil all clients expectations thoroughly. Furthermore, the standard ISO 9001:2008 does not have a specific requirement of risk analysis at the planning stage [1; 13].

Although there are a lot of similarities between two standards, there may also be noticed significant differences between them. Therefore it is important that they complement each other.

3.2. Benefits of implementing the system

The implementation of any system to a new or already established company is complicated. It requires huge costs and demands appropriate involvement of personnel. A frequently asked question is the following: is all this effort profitable?

The answer to this question is not clear, but a lot of experts believe that benefits of implementing standards, their upkeep and certification is on behalf of such practices. The company which has decided to implement the ISO 22000:2005 standard has undoubtedly harmonized and unified the requirements referring to the safety of food production [14]. This makes their position on the market stronger by building trust among trading partner contractors and customers based on the creation of safe products. Such a policy can be contributed to:

- better communication in the food chain,
- improved documentation,
- better process planning,
- opportunities to gain goods and occurrence of products on the European Union markets,
- increasing confidence among organs of official food control as well as control of road transport,
- lowering the amount of audits carried out by trade partners,
- increasing safety of food management and lowering costs and risks including return of product,
- optimum distribution of resources (internally and along the food chain),
- more efficient and dynamic control of food safety hazards,
- wide application based on focus on end results [2; 4; 15].

It is worth remembering that only a well-defined system guarantees good image of the company and gives customers assurance that the product which they purchase has been prepared under the strict supervision. For this purpose it is recommended for a company to obtain a relevant certificate. Systematic audits organized by people from the outside of the company can help to identify possible shortcomings [1].

4. Conclusions

On the basis of literature on the subject it can be said that ISO 22000:2005 and ISO 9001:2008 are not alternative standards. Undoubtedly both of them are compatible with each other. According to K. Mokrosińska this solution provides comprehensive management of the company while ensuring health safety of products [8]. So the guarantee of creating the product which will fulfil the requirements of safety as well as quality is the mutual interaction between those systems. In relation to the above the implementation of only one standard could be regarded as not complying with one of the most important conditions. So it is worth analyzing if the fulfilment of only one condition is enough in the world of severe competition.

The implementation and certification of both systems is relatively expensive for an entrepreneur, but it is important that he receives a fully integrated management system in the company. Furthermore from the consumer's perspective the quality and safety of food production are equally important.

Thus, the final decision about the certificate of one or two standards belongs to an entrepreneur himself. He has to answer the fundamental question: whether to promote quality and safety of food production which will help him to build long-term relationships with customers or to be satisfied with barely fulfilling customers' expectations.

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ISO 22000:2005 I ISO 9001:2008 W ZAKRESIE ZARZĄDZANIA W PRZEMYSŁE SPOŻYWCZYM – INTEGRACJA LUB WYMIANA? (PRACA PRZEGLĄDOWA)

Streszczenie: Norma ISO 22000:2005 stosunkowo niedawno pojawiła się na rynkach Unii Europejskiej. Obecnie widać jej rosnącą popularność wśród firm znajdujących się w sektorze spożywczym. Ujednolica ona wymagania dotyczące produkcji żywności. Swoją strukturą i tematyką w dużej mierze przypomina standard ISO 9001:2008. W artykule podjęto więc rozważania, czy normy te są alternatywą dla siebie, czy też wzajemnie się uzupełniają.

Słowa kluczowe: ISO 22000:2005, kompatybilność, interaktywna komunikacja, programy wstępne.