

## IMPLEMENTATION OF INTERNATIONAL STANDARDS AS THE WAY OF ENSURING THE SAFETY OF FOOD PRODUCTS

*The article declares that the implementation of new international standards ISO 22000 on Food Safety Management Systems can help to solve the problem of food safety, which will allow facilitating the integration of HACCP and ISO 9001.*

*The essence, features, and differences of ISO 22000: 2018, which provides the usage of the PDCA cycle, which can be used to manage the quality management system on a systematic basis effectively, are considered. The content of the PDCA methodology is defined, as well as the components of the process improvement cycle are analyzed.*

*It has been defined that the PDCA methodology is based on the risk-based thinking, enabling the enterprise to identify factors that may cause deviations from the planned results of its processes and to develop prevention measures to minimize their negative impact and to maximize the opportunities that arise. The risk management process, as well as the risk response and opportunity activities, are presented.*

*It is emphasized that within management systems business risk can be perceived as an influence not only of a negative direction, but also a positive one, and perceived as an "opportunity". It is justified that risk and opportunity accounting creates the basis for improving the efficiency of all processes, achieving higher results and preventing negative consequences.*

*The role of management in emerging new commitments that demonstrate leadership is outlined. It is emphasized that the identification of all stakeholders and their expectations will help the organization to adjust its overall strategic development orientation.*

**Keywords:** *international standards, food safety, management system, PDCA methodology, risk-oriented thinking, risk management.*

For food businesses, the problem of ensuring its safety has not lost its relevance for the past several decades. According to the World Health Organization, about 420,000 people die every year from eating poor or dangerous foods in the world [1, p. 40].

The solution to this problem can be facilitated by the development and implementation of new international standards at the enterprises, which regulate and strengthen the control over the production of safe food. Therefore, in June 2018, the International Organization for Standardization (ISO) issued a new version of the ISO 22000 standard on Food Safety Management Systems. At the same time, ISO 22000: 2005 is revoked and companies that have been certified to this standard must translate their certificate to ISO 22000: 2018 during a three-year transition period.

Some changes have been made to ISO 22000: 2018 compared to the previous version. In particular, the standard has been translated into the “High-Level Structure” (HLS) of ISO, which makes the structure of its sections broadly identical to the ISO 9001: 2015 “Quality Management System. Requirements”.

The adoption of the top-level structure of the HLS has led to the alignment of the structures of standards 22000 and standards ISO 9001 or ISO 14001. ISO 22000: 2018 now consists of 10 sections, similar to all standards of management systems, which makes it easier for organizations to integrate ISO 22000 with other standards (e.g. ISO 9001 or ISO 14001). Thus, the development of a new version of ISO 22000 was an attempt to facilitate the integration of HACCP and ISO 9001.

ISO 22000: 2018 states that enterprises in their safety management systems should be guided by the PDCA cycle approach, as well as risk-oriented thinking, which is a conceptually new approach to this standard.

The new ideology of the standard is that the PDCA cycle is applied in a dual way as to separate cycles that work together: one covers the management system and the other concerns HACCP principles. It should be noted that any enterprise engaged in the production of food products on the territory of Ukraine is obliged to maintain HACCP procedures for its safety.

According to the current legislation of Ukraine, the State Consumer Service as the main regulator of the market in Ukraine since September 20, 2018, checks the capacities that operate with food products for the implementation of the HACCP system. In the absence of HACCP, the enterprise may receive a fine if it is unable to confirm to the inspector of state control the presence of the HACCP system during the inspection.

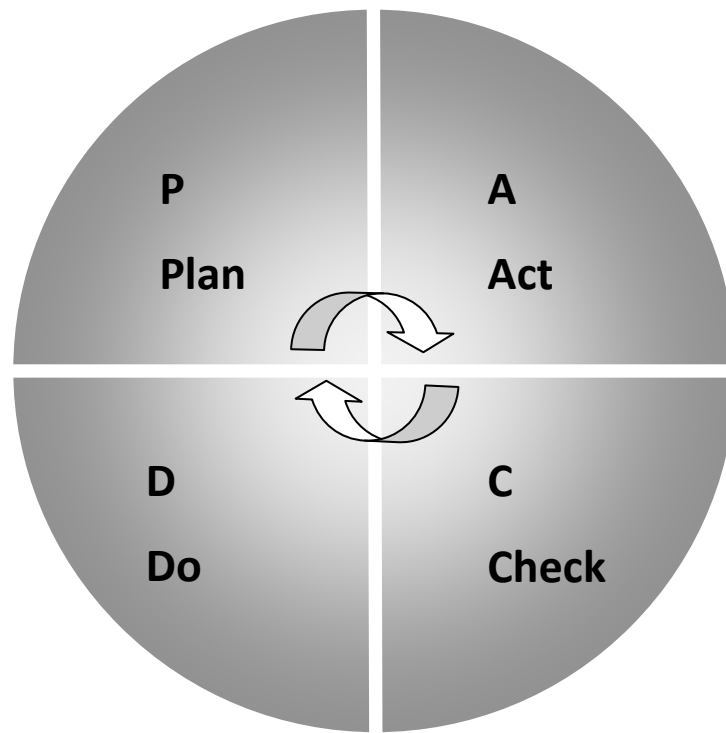
The cycle of improvement of processes of PDCA (plan, do, check, act/influence) is a well-known model of continuous improvement of processes. The cycle is a tool that can be used to manage processes and systems. This is one of the most prominent quality management practices, named after its developers - the Deming-Schuhart cycle, which can be used to manage a quality management system effectively. The PDCA methodology can be briefly described as the following:

P - Plan - setting goals and processes, which are necessary for achieving results according to customer requirements and enterprise policies: "What to do" and "How to do" - an assessment of the possibilities of planning necessary changes, defining goals and measures. Plans are being developed through the identification and analysis of problems, as well as capabilities assessment and planning necessary changes.

D - Do - search for problem-solving and implementation of planned activities, as well as control of implementation; implementation of the established processes and search for solutions of the problems with the implementation of planned activities, as well as monitoring the implementation.

C - Check - monitoring and measurement processes with the goals and policies of the organization, evaluating results, making conclusions according to the tasks assigned, and reporting on the results.

A - Act - applying measures for continuously improving processes and making decisions based on received conclusions; if the changes do not solve the problem - repeat the cycle, while making adjustments to the plan (improving the efficiency of the process).



**Fig. 1. Plan-Do-Check-Act Process Management Cycle**

The PDCA methodology is used as a cycle of continuous improvement, with thinking, which is based on risk assessment at each stage. According to the PDCA, the essence of management at the enterprise lays in continuous improvement, and in this regard, changes of goals, plans, creating newly planned events, etc.

The cycle methodology can be applied to all processes. All phases of the cycle depend on the leadership and provide "risk-based thinking" in all cases.

Risk-oriented thinking enables the company to identify factors that may cause deviations from its planned processes and develop preventative measures to minimize their negative impact and to maximize the opportunities that arise.

Risk management in section 6.1 of the standard now requires companies to identify risks that may affect (positively or negatively) the ability of the management system to achieve the intended results and take risk management measures.

A new approach to risk is a vital concept in the food business. This concept distinguishes risk at the operational stage and identifies the business levels of the management system. Companies now need to identify, consider, and, if necessary,

take action to eliminate any risks that may (positively or negatively) affect the ability of the management system to achieve the intended results.

Moreover, if earlier (in version ISO 22000: 2005) it was mentioned risk in the context of food safety as the existence of the likelihood of adverse effects on health (e.g., disease) and the severity of the consequences of such effects (death, hospitalization, absence at work, etc.) during a hazard, the latest version of standard 22000: 2018 introduces a new term, business risk. It represents the probability of losses as a result of deterioration of the business environment and negative changes in the organizational and management sphere of the enterprise, which can affect the ability of the company to achieve the desired result.

It should be noted that operational risk is related to the enterprise production function execution, and business risks are protected from fraud and external factors.

Also, one should not forget that within management systems, business risk can be perceived as an influence not only of a negative direction, but also a positive one, and perceived as an "opportunity".

The enterprise already needs to carry out the study of not only operational risks but also financial and legal risks. Accounting for risks and opportunities creates the basis for improving the efficiency of all processes, achieving better results and preventing negative consequences.

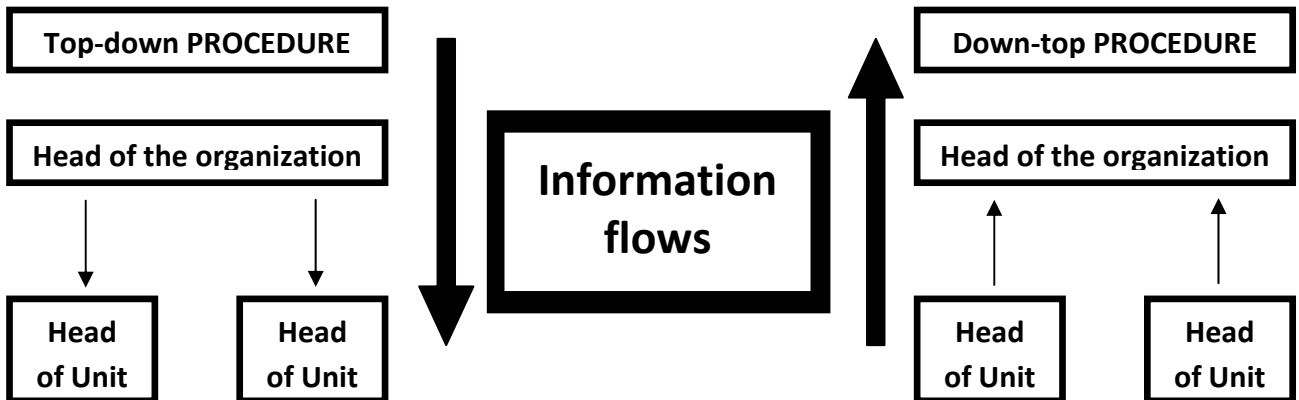
Opportunities may arise as a result of a situation favorable to achieving the intended result, for example - as a set of circumstances that enable an enterprise to attract consumers, develop new products and services, reduce the number of discrepancies, and increase productivity.

Opportunity-targeted actions may also include consideration of the risks involved. Risk is the impact of uncertainty. And any such uncertainty can have a positive or negative impact. Positive deviation arising from risk can create opportunities, but not all positive effects of risk will ultimately lead to opportunities. In figure 2 the risk management process is outlined.



**Fig. 2. The risk management process**

The organization must plan actions for risk response and opportunity response and the way of integrating and implementing those processes.



**Fig. 3. Managing risks and opportunities. Creating a risk map**

Risk prevention actions may include risk aversion, risk tolerance to explore the opportunity associated with it, eliminating the risk source, changing the likelihood of occurrence or impact of risk, risk sharing, and risk containment by making an informed decision.

Opportunities can lead to new practices, new product development, new methods, new partnerships, the use of new technologies and other desirable and stimulating opportunities to meet the needs of the organization and its customers.

The standard more clearly defines the role of management in which there are new commitments that demonstrate leadership:

- responsibility for the efficiency of the system;
- combining operational requirements and business processes;
- guarantee of achievement of necessary results;
- identification of risks and opportunities affecting customer satisfaction;
- improving the work of the HACCP system, including support for people involved in the work.

According to the requirements of the new standard, the enterprise must take into account the needs not only of consumers but also of all stakeholders, including customers, owners, employees, etc.

Identification of all stakeholders and their expectations will help the organization adjust its overall strategic development orientation.

The organization should monitor and analyze information related to external and internal factors. The factors (circumstances) or conditions identified for consideration may have both positive and negative effects.

Understanding external conditions (circumstances) can help to address issues related to legislation, technological aspects, competition, culture, social aspects, and economic conditions - both internationally, nationally and locally.

Understanding the internal environment can also help to address issues related to the values, cultural aspects and performance of the organization.

**Conclusions.** Improving food safety and enhancing the competitiveness of food companies is inextricably linked to improving their regulatory framework. The use of

the HACCP system at domestic enterprises is, although vital, but only one step towards developing a common quality management strategy aimed at the scientific, technological and industrial aspects of food industry development.

The methodological side of implementing a food security system requires businesses to make a qualified analysis of identifying a limited range of potential factors that can cause harm the health of consumers and to focus the enterprise's limited resources on those factors by developing a system of measures that will make it impossible (or reduced to the accepted level) consumer health risk. A significant step towards food safety may be the application of the approach using a PDCA cycle based on risk assessment at each stage. Companies now need to identify, consider and, where appropriate, take action to address any risks that may (positively or negatively) affect the ability of the management system to achieve the intended results.

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***Страшинська Л.В.***

### **Впровадження міжнародних стандартів як напрям забезпечення безпеки харчових продуктів**

*У статті визначено, що вирішенню проблеми забезпечення безпеки харчових продуктів може сприяти впровадження на підприємствах нових міжнародних стандартів ISO 22000 на Системи менеджменту безпеки харчової продукції, що дозволить полегшити інтеграцію HACCP та ISO 9001.*

*Розглянуто сутність, особливості та відмінності стандарту ISO 22000:2018, в якому передбачається використання циклу PDCA, при застосуванні якого можна ефективно управляти системою управління якості на системній основі. Визначено зміст методології PDCA, а також проаналізовано складові циклу покращання процесів.*

*Визначено, що методологія PDCA ґрунтується ризик-орієнтованому мисленні, що дає змогу підприємству встановити фактори, які можуть викликати відхилення результатів його процесів від запланованих та розробити заходи по попередженню, щоб мінімізувати їх негативний вплив, а також максимально використати можливості, які виникають. Представлено процес керування ризиками, а також дії по реагуванню на ризики та можливості.*

*Наголошено, що в межах систем менеджменту бізнес-ризик може сприйматися як вплив не тільки негативного напрямку, але й позитивного, і сприйматися як «можливість». Обґрунтовано, що облік ризиків та можливостей створює основу для підвищення результативності усіх процесів, досягнення більш високих результатів та попередження негативних наслідків.*

*Окреслена роль керівництва, у якого з'являються нові зобов'язання, що демонструють лідерство. Наголошено, що ідентифікація всіх зацікавлених сторін та їх очікувань допоможе організації скорегувати загальну стратегічну орієнтацію розвитку.*

**Ключові слова:** міжнародні стандарти, безпечність харчових продуктів, система менеджменту, методологія PDCA, ризик-орієнтоване мислення, управління ризиками.