

DOI: 10.15276/ETR.01.2024.13
DOI: 10.5281/zenodo.12119438
UDC: 338.439:614.3:637.5
JEL: D18, L16, P42, Q12

IMPROVING THE ENTERPRISE RISK MANAGEMENT SYSTEM THROUGH THE IMPLEMENTATION OF THE HACCP SYSTEM

УДОСКОНАЛЕННЯ СИСТЕМИ УПРАВЛІННЯ РИЗИКАМИ ПІДПРИЄМСТВА ЧЕРЕЗ ВПРОВАДЖЕННЯ СИСТЕМИ HACCP

Volodymyr Yu. Filippov, Decon, Professor
Odessa Polytechnic National University, Odesa, Ukraine
ORCID: 0000-0003-4429-7582
E-mail: v.filippov@op.edu.ua

Sergey O. Neykov, PhD in Economics
Odessa Institute of Entrepreneurship and Law, Odesa, Ukraine
ORCID: 0009-0003-8240-2571
Email: n.serg.a@ukr.net

Dariia O. Shepeliuk
Odessa Polytechnic National University, Odesa, Ukraine
Email: shepeliuk.8865218@stud.op.edu.ua

Alina M. Shevchenko
Odessa Polytechnic National University, Odesa, Ukraine
Email: shevchenko.8865179@stud.op.edu.ua

Received 27.01.2024

*Філіппов В.Ю., Нейков С.О., Шепелюк Д.О., Шевченко А.М.
Удосконалення системи управління ризиками підприємства через
впровадження системи HACCP. Науково-методична стаття.*

У статті розглядаються переваги та недоліки впровадження системи HACCP, а також детальний алгоритм її впровадження. Наразі підприємства все частіше стикаються з новими викликами: зростаючими вимогами споживачів, жорсткою ринковою конкуренцією та посиленням законодавчих вимог. Це змушує їх шукати нові методи ефективного управління ризиками. Незважаючи на існуючі практики, багато компаній продовжують мати проблеми з управлінням ризиками, особливо у сфері безпеки продукції. Критичні випадки підкреслюють необхідність контролю виробництва на всіх етапах. Удосконалення системи управління ризиками на підприємстві через впровадження системи HACCP є важливим кроком для забезпечення безпечності харчових продуктів. Її інтеграція допомагає вирішити проблеми, пов'язані з потенційними ризиками безпеки харчових продуктів у харчовій промисловості. Ідентифікація, оцінка та контроль потенційно небезпечних факторів гарантують виробництво безпечної продукції.

Ключові слова: система, управління, удосконалення, ризик, підприємство, HACCP, принципи, алгоритм, впровадження

Filippov V.Yu., Neykov S.O., Shepeliuk D.O., Shevchenko A.M. Improving the Enterprise Risk Management System through the Implementation of the HACCP System. Scientific and methodical article.

The article discusses the advantages and disadvantages of implementing the HACCP system, along with a detailed algorithm for its implementation. Currently, businesses are increasingly facing new challenges: growing consumer demands, stiff market competition, and heightened legislative requirements. This forces them to seek new methods of effective risk management. Despite existing practices, many companies continue to experience issues with risk management, especially in the realm of product safety. Critical incidents underscore the need for production control at all stages. Enhancing the risk management system in enterprises through the implementation of the HACCP system is a significant step towards ensuring the safety of food products. Its integration helps address issues related to potential risks in food safety within the food industry. Identification, assessment, and control of potentially hazardous factors ensure the production of safe products.

Keywords: system, management, improvement, risk, enterprise, HACCP, principles, algorithm, implementation

Recently, enterprises have increasingly faced a multitude of new risks, such as growing consumer demands, intense market competition, and stricter regulatory frameworks, which place significant pressure on businesses, forcing them to find new ways and methods of effective risk management. Despite existing management practices and standards, many companies continue to encounter deficiencies in risk management, particularly regarding product safety. Incidents of food poisoning continue to highlight the need for stringent control over production processes at all stages, from raw materials to finished products.

One effective tool for improving the risk management system in an enterprise could be the implementation of the HACCP system. The Law of Ukraine No. 771/97-VR "On the Basic Principles and Requirements for Food Safety and Quality" mandates the obligatory implementation of the European food safety control system based on the HACCP system in Ukrainian enterprises [1].

Accordingly, starting from September 2016, all participants in the food market must mandatorily implement hygiene standards in their production facilities. From 2020, they must also implement procedures based on HACCP principles. This system is recognized worldwide because it helps manage risks and prevent threats to food safety [2].

Thus, the HACCP system is an integral part of improving the existing risk management methods in an enterprise, providing the ability to prevent risks such as consumer health risks, legal risks, reputational risks, and those related to food safety, among others.

Analysis of recent research and publications

After certain aspects of Ukrainian legislation in the food industry were brought into line with European legislation, which notably mandates the application of the HACCP system, scholars have increasingly devoted attention to researching this topic. However, it is worth noting that most modern researchers examine the HACCP system in the context of the activities of specific food enterprises. This is explained, in particular, by the fact that the general justification for the necessity of this system, the procedure for its implementation, and the principles of the HACCP system are established and clearly regulated by Ukrainian law. Therefore, researchers focus their studies on examining specific aspects of the implementation and peculiarities of this system on certain food industry enterprises, such as meat processing, bakery, confectionery, dairy, and others. For instance, Tkachenko, A.S., Sutkovich, T.Yu., Horiachova, O.O., Sokil, A.A., & Kovalchuk, Kh.I. [2] thoroughly justify the need for implementing the HACCP system and investigate the process of its implementation during juice production in their work. Ivanishcheva, O.A., & Pakhomskaya, O.V. [13] conducted a detailed study of the peculiarities of implementing the HACCP system in Ukrainian meat processing enterprises, as well as analyzed existing problems and ways to address them. The authors noted that "HACCP enables systematic assurance of high quality and safety of meat products, enabling their entry into international markets."

As we can see, these works focus on specific aspects of the HACCP system, without considering the system as a whole, its impact on risk management processes, and its improvement.

Unsolved aspects of the problem

Although the HACCP system is already implemented in many Ukrainian enterprises, questions remain about its effectiveness and compliance with modern requirements. Key aspects that remain unresolved include:

- insufficient attention to identifying potential threats, leading many companies unable to detect all potential safety threats in the early stages of the production process;
- the need for constant updating and adaptation of the HACCP system to constantly changing legislation and technological progress;
- inconsistent implementation of standards and procedures, resulting in reduced effectiveness;
- the need for ongoing support and training of staff to ensure a proper understanding and implementation of HACCP requirements at all management levels;
- the need to strengthen monitoring and control mechanisms to prevent possible violations and ensure the stability of risk management.

These aspects remain important in the context of further improving risk management systems in enterprises, both through the implementation of the HACCP system and for the ongoing effective management of this system.

The aim of the article is to determine how the implementation of the HACCP system in enterprises addresses the issue of improving risk management systems. Additionally, the article focuses on examining specific aspects of implementing the HACCP system in various food industry enterprises, including meat processing, baking, confectionery, dairy processing, and others.

It is important to also consider the impact of implementing the HACCP system on enterprises in terms of their competitiveness and ability to meet market demands. While one advantage of implementing the HACCP system is increased consumer trust in the company's products, which can lead to increased sales volumes and expanded market opportunities, disadvantages may include high costs associated with implementation and maintenance, as well as potential administrative challenges in compliance with regulatory legislation.

In light of these considerations, further research into the implementation of the HACCP system in enterprises will be an important direction for the development of scientific research in the field of risk management in the food industry. Understanding both the advantages and disadvantages of this system will allow for the development of strategies to optimize its use and enhance the effectiveness of risk management in enterprises.

The main part

Risk management is an integral component of any activity. Understanding and effectively managing risks helps reduce the likelihood of negative events and minimize their impact on business processes. Modern scholars define "risk management" in an enterprise as part of management that concerns managers' specific activities in conditions of uncertainty and complex management decisions; it is "a process based on anticipating the realization of risk, determining the probable scale of its manifestation, as well as forming and subsequently implementing a complex of measures aimed at preventing or minimizing losses associated with its realization" [3]. Therefore, based on these definitions, we can assert that risk management is the process of identifying, assessing, managing, and minimizing risks that may affect the achievement of goals, serving as a crucial element of any activity because it helps reduce the probability of negative event impacts and maximize opportunities for goal achievement [4].

Improving the risk management system in an enterprise is a key task in today's business environment. Firstly, in conditions of growing competition and a volatile market environment, companies face significant risks that can affect their profitability and resilience. Secondly, increasing consumer demands and legislative standards regarding the quality, safety, and environmental sustainability of

products compel companies to actively enhance their risk management systems to prevent potential crises and preserve their reputation.

Thus, improving the company's risk management system manifests in the necessity of adapting to a changing environment, ensuring resilience, and maintaining competitiveness in conditions of uncertainty and instability.

Risks have a significant impact on the production activities of an enterprise, with biological hazards arising during the manufacturing process, including the presence of harmful bacteria, viruses, parasites, and other microorganisms. These hazards can occur at any stage of production, from initial raw material collection to final product packaging.

In addition to biological hazards, enterprises also face various other types of risks in their production processes. These include chemical hazards, such as the presence of harmful chemicals or toxins in raw materials or the production environment, as well as physical hazards like machinery malfunctions or accidents in the workplace. Moreover, economic risks, such as fluctuations in raw material prices or changes in market demand, pose significant challenges to businesses.

Effectively managing these diverse risks requires a comprehensive approach that integrates various strategies, including risk identification, assessment, mitigation, and monitoring. By implementing robust risk management practices, enterprises can enhance their resilience, safeguard their operations, and maintain the trust and confidence of stakeholders.

For example, in the production of food products such as meat, milk, eggs, and fish, biological hazards include bacteria such as salmonella, E. coli, and others, as well as viruses. These microorganisms can be present in raw materials or the surrounding environment and, if not detected and controlled during the production process, can cause food poisoning and other illnesses in consumers. Ineffective management of such risks can lead to disruptions in production processes, questioning the safety of the manufactured products, hence the need to emphasize the importance of maintaining the safety of food products. Therefore, it is essential to implement control and preventive measures at all stages of production, including proper storage of raw materials, hygiene control in production premises, appropriate heating and cooling of the product, as well as establishing critical control points using the HACCP system to detect and eliminate potential biological hazards. This is the only way to minimize the risk of foodborne illnesses and ensure consumers are provided with safe products.

Hazard Analysis Critical Control Points (HACCP) is an internationally recognized method for identifying and managing risks related to food safety. It is a management system in which the safety of food products is achieved through the analysis and control of biological, chemical, and physical hazards from raw materials to circulation and consumption of finished products [5].

The Law of Ukraine dated October 26, 2023, No. 771/97-VR "On the Basic Principles and Requirements for the Safety and Quality of Food Products" (as amended) stipulates that the implementation of the HACCP system is mandatory in the domestic market of Ukraine, and sanctions for violations of the HACCP system requirements have been in effect since September 20, 2018 [6]. It is worth noting that most enterprises exporting their products to the EU began using the HACCP system long before its full implementation in Ukraine.

In Ukraine, the requirements for the development and implementation of food safety management systems based on HACCP principles are declared in DSTU 4161-2003 "Food Safety Management System. Requirements" and DSTU ISO 22000:2019 "Food safety management systems. Requirements for any organization in the food chain" [7]. However, certification and standardization are optional for the system; it is sufficient to use HACCP plans, instructions, and constantly document the work done in this direction, which further confirms compliance with legislative requirements.

According to the Law of Ukraine dated December 25, 2015, No. z1704-12, "On Approval of Requirements for the Development, Implementation, and Application of Ongoing Procedures Based on the Principles of the Hazard Analysis Critical Control Points (HACCP) System" (as amended), "the application of the HACCP system involves:

1. Identifying potential hazards;
2. Establishing where and how hazards can be eliminated, prevented, or brought to an acceptable level;
3. Developing appropriate measures and training personnel;
4. Implementing measures in practice and documenting procedures" [8].

As we can see, the application of the system is comprehensive and systematic, which helps ensure a high level of product safety, increase consumer trust in the products, reduce health risks, and ensure compliance with legislative requirements in the field of food safety.

At the same time, the HACCP system involves the use of principles (Table 1). These principles define the main approaches and strategies used in the practical implementation of the system in food production.

Adhering to these principles helps ensure the effective functioning of the food safety management system, minimize risks, and guarantee compliance with food safety standards.

It is worth noting that despite the necessity of implementing this system, it still has certain drawbacks. Therefore, by examining foreign sources, let's consider the shortcomings of the HACCP system.

Understanding these shortcomings is important for a comprehensive approach to food safety. In Table 2, we will consider some of the key drawbacks of HACCP.

Table 1. Principles of the HACCP system

Name	Essence	Features of implementation
1. Hazard Analysis	This principle emphasizes the need for identifying and analyzing hazardous factors that need to be prevented, avoided, or minimized.	To conduct analysis and identify hazardous factors, the "brainstorming" method can be used, where each HACCP team member expresses their views on threats to production or manufacturing, and then works on measures to improve the situation.
2. Identification of Critical Control Points (CCPs)	It involves establishing CCPs at the stages that need to be controlled to prevent, eliminate, or minimize the occurrence of hazardous factors.	To determine critical control points more quickly and effectively, it is recommended to use a "decision tree" - a sequence of specific questions that help establish CCPs.
3. Establishment of critical limits for each CCP	This principle highlights the importance of setting critical limits at control points. They help establish a boundary separating the release of safe products from unsafe ones.	It is important to establish critical limits for each critical control point, without exceptions. Moreover, these limits must be clearly justified, as minor errors can lead to product hazards.
4. Establishment of monitoring procedures	It involves monitoring at critical control points. The data obtained are then used for timely management regarding the identified hazardous factors.	The development of a monitoring system for each CCP is envisaged, which should have a clear periodicity and responsible persons for conducting control/monitoring.
5. Corrective actions	Establishment of corrective actions that must be promptly taken when deviations from critical limits are detected during monitoring.	Corrective actions should be developed in advance by the HACCP team.
6. Verification of HACCP effectiveness	Verification that the HACCP system is working effectively and correctly.	Development of procedures to be applied on a regular basis to assess the effectiveness of the implemented principles 1-5.
7. Development of methods for documenting all procedures	Development of documentation methods and record-keeping to confirm the effectiveness of implementing the above-mentioned principles.	This procedure should correspond to the scale of facilities and the peculiarities of the technological process. Moreover, market operators should have the ability to verify the effectiveness of measures provided by the HACCP system.

Source: compiled by author on materials [5, 9]

Table 2. Disadvantages of the HACCP system

Name	Content
1. Challenges with implementation in small businesses	Implementing HACCP can be a challenging task, especially for small businesses, as it requires significant effort and resources: material, technical, and human, which may not always be sufficient. Additionally, training personnel and controlling processes can be costly in terms of both time and material resources.
2. The need for narrow specialization	Successful implementation of HACCP requires expertise in food safety, microbiology, and process management. This can be a problem for small businesses lacking the necessary expertise, which may need to engage or train specialists, leading to increased costs.
3. Failure to consider emerging risks	HACCP focuses on controlling specific identified hazards but may not always consider unforeseen risks or new threats that may arise due to changes in processes or technologies.
4. Additional efforts to comply with legal requirements	The HACCP plan needs to be constantly updated to reflect changes in processes and legal requirements, which may require significant effort and resources.
5. The danger of employee complacency	After implementing HACCP, there is a risk of employee complacency, as they may disregard safety procedures due to their perceived reliability.
6. Significant documentation volume	Implementing HACCP requires a significant amount of documentation, which can be a considerable challenge for businesses and may require additional administrative resources.
7. Insufficient quality control	HACCP does not cover all aspects of food quality, so businesses may need to implement additional quality management systems.
8. Low attention to critical aspects of operations	HACCP primarily focuses on the production process, overlooking other aspects such as distribution and consumer use.
9. Changes in processes and organizational culture	Initial implementation of HACCP can be particularly challenging as it requires significant changes in processes and organizational culture.
10. Incorrect prioritization of the system	There is a risk of focusing too much on documentation rather than actual safety practices and continuous improvement.
11. Large time expenditures	Implementing HACCP requires a considerable amount of time for preparation, staff training, process adaptation, and documentation. This can pose significant obstacles for businesses, especially in high-paced environments with limited resources.
12. Communication difficulties	Effective implementation of HACCP requires proper communication among all stakeholders, including management, workers, regulatory authorities, and others. Inadequate communication can lead to misunderstandings, errors in procedure execution, and reduced system effectiveness.

Source: compiled by author on materials [10, 11]

Therefore, these drawbacks indicate that implementing this system requires proper planning, organization, and control. Although drawbacks are an integral part of the implementation and use of HACCP, proper management can turn these challenges into opportunities for further improvement and development.

Adaptation of the employee motivation system in innovative sustainable enterprises during wartime in Ukraine can be a crucial step for the effective implementation of the HACCP system. Enhancing the enterprise's risk management system through the implementation of the HACCP system can play a key role in ensuring its functioning amidst uncertainty and the dangers of war [14]. This can provide the necessary incentive for personnel to respond to the challenges of wartime and ensure the safety and quality of products in high-risk conditions. Furthermore, improving the enterprise's risk management system through the

implementation of the HACCP system can become an important component of the strategy to ensure business resilience and endurance during times of crisis and unpredictability in wartime.

Additionally, amidst challenges such as wartime in Ukraine, the adaptation of employee motivation systems in innovative sustainable enterprises becomes essential. This adaptation, coupled with the enhancement of risk management systems through HACCP implementation, can serve as a vital strategy for ensuring business resilience and product quality even in high-risk conditions.

In contrast to the mentioned drawbacks, the implementation of HACCP has significant advantages that are important not only for producers but also crucial for consumers. Therefore, investigating the benefits of HACCP will allow us to better understand its impact and benefits (Table 3).

Table 3. Advantages of implementing the HACCP system

Direction	Advantages
1. For the product manufacturer	- Enhancing the safety of produced goods, which leads to reduced business risk and increased customer satisfaction.
	- Improving the company's reputation and protecting the brand.
	- Compliance with legal requirements.
	- Clear understanding by personnel of the product safety requirements and the methods by which they are ensured.
	- The company obtains evidence of its products' safety, which can be used in court cases if necessary and is recognized by insurance companies.
	- Improving staff organization and labor productivity.
	- Reducing long-term losses and increasing cost efficiency.
	- Decreasing the number of customer complaints and gaining their trust.
	- Creating opportunities for market expansion.
2. For consumers	- Increasing trust in food products.
	- Minimizing the risk of foodborne illnesses.
	- Enhancing quality of life as a result of consuming safe products.

Source: compiled by author on materials [12]

Continuous monitoring and adaptation of strategies, such as employee motivation systems and risk management practices, are essential for ensuring effectiveness and relevance in the face of changing circumstances. Furthermore, fostering a culture of innovation and resilience within enterprises can further strengthen their ability to navigate challenges and capitalize on opportunities, ultimately contributing to long-term sustainability and success.

The adaptive management of innovative development in enterprises, particularly amidst the digitalization of the national economy, can be further reinforced by improving the risk management system through the implementation of the HACCP system. As noted, implementing HACCP addresses numerous issues concerning potential risks in food safety within the food industry [15]. By identifying, assessing, and controlling potential hazardous factors, the HACCP system ensures the production of safe products.

Among the potential risks influenced by the implementation of the HACCP system, a primary focus is on reputation issues and their reinforcement. This includes addressing concerns such as weakened consumer trust due to incidents like food poisoning or other safety-related incidents. Compliance with

legislative requirements and standards also plays a crucial role in reducing the risk of administrative penalties and sanctions. Furthermore, the paramount aspect is that HACCP implementation aids in safeguarding consumer health by ensuring that products meet international safety standards.

Therefore, integrating the HACCP system into the enterprise's risk management strategy can effectively address a range of issues related to food safety, thereby enhancing overall risk management practices. Consequently, the implementation of the HACCP system emerges as a crucial step in ensuring the safety of food products and enhancing production efficiency within the enterprise, leading to positive outcomes for both the company and consumers.

Given the state of war in Ukraine following the Russian invasion on February 24, 2022, the question of implementing the Hazard Analysis and Critical Control Points (HACCP) system becomes even more pressing. During times of conflict, ensuring food safety is of paramount importance, as access to safe and nutritious food becomes essential for the well-being and survival of individuals and communities affected by the crisis [16].

While the challenges of implementing HACCP in wartime conditions are undeniable, the potential risks associated with foodborne illnesses and contamination cannot be underestimated. The disruption of supply chains, damage to infrastructure, and scarcity of resources may exacerbate food safety concerns, making it imperative to implement robust risk management measures.

Introducing HACCP during wartime presents a unique set of challenges, including logistical hurdles, manpower shortages, and security risks. However, the benefits of implementing a systematic approach to food safety, such as HACCP, are undeniable. By identifying and controlling critical points in the production process, HACCP can help mitigate the risk of foodborne illnesses and ensure the safety of food products consumed by the population.

In light of the ongoing conflict, it is crucial to adopt a pragmatic approach to implementing HACCP, taking into account the realities of wartime conditions. This may involve prioritizing key aspects of the HACCP system that are most critical for ensuring food safety,

streamlining administrative processes, and providing support and resources to enterprises facing operational challenges due to the conflict.

Furthermore, given the moratorium on inspections during wartime, the introduction of HACCP can serve as a proactive measure to address food safety concerns and minimize the risk of foodborne illnesses without relying solely on regulatory oversight.

In efforts to enhance the efficiency of the regional poultry market, various strategies can be implemented to ensure the smooth operation of poultry production and distribution, especially in times of conflict. Investing in infrastructure and logistics, supporting local poultry producers, fostering collaboration among stakeholders, implementing quality assurance measures such as the HACCP system, and promoting consumer education can collectively contribute to maintaining high standards of food safety, bolstering market resilience, and ensuring the availability of safe and nutritious poultry products for consumers amidst challenging conditions [17].

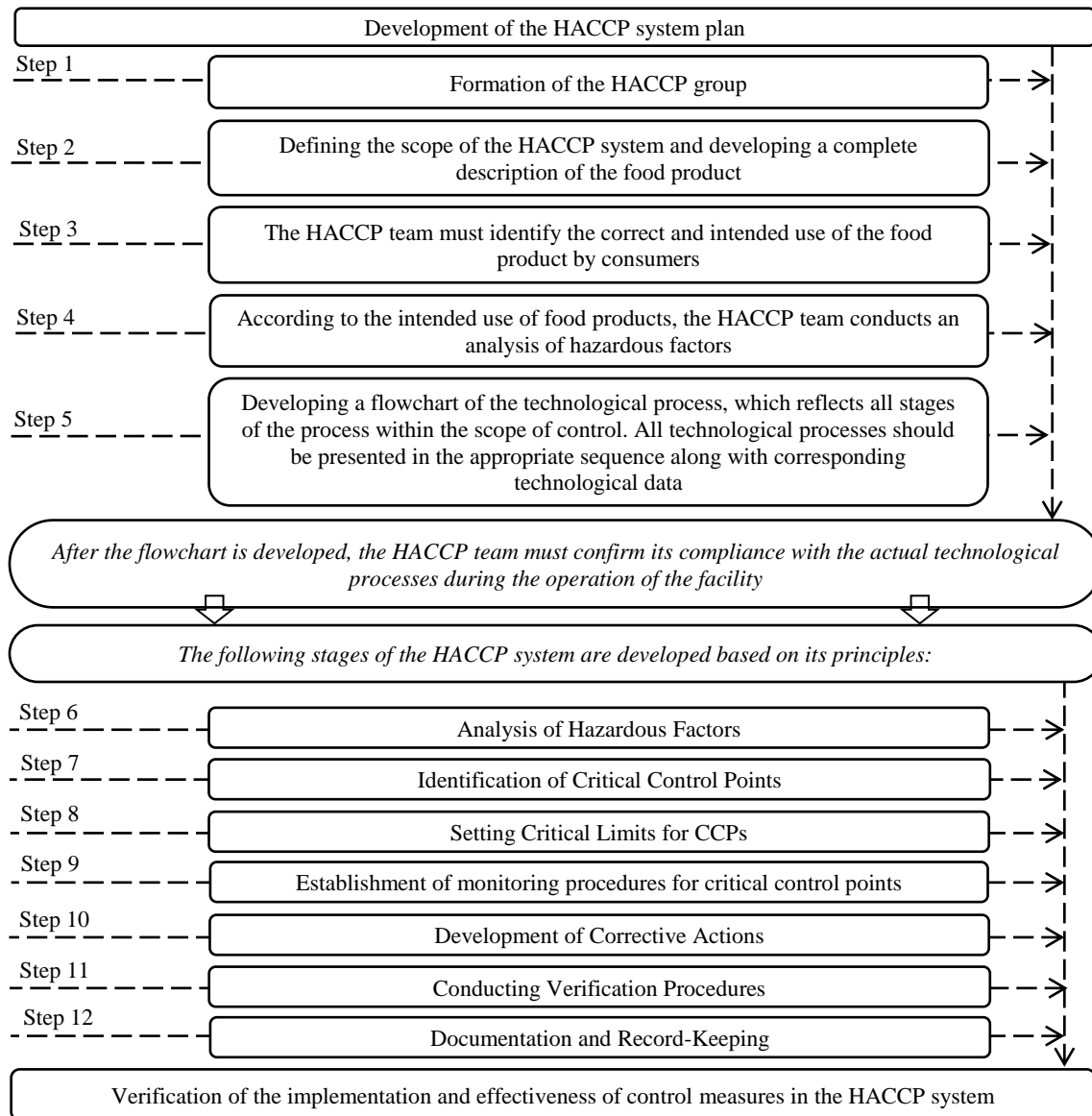


Figure 1. Algorithm for Implementing the HACCP System

Source: compiled by author on materials [8]

While implementing HACCP in wartime conditions presents significant challenges, its importance in safeguarding food safety and public health cannot be overstated. By taking a pragmatic and proactive approach to implementation, enterprises can help mitigate the risks associated with foodborne illnesses and ensure the safety of food products consumed during times of conflict.

Thus, it is evident that implementing the HACCP system is an important step for a company, which will help it gain a number of advantages. It is important to note that the system must be properly organized and implemented to minimize any disadvantages that may arise from incorrect implementation of HACCP and to maximize its benefits. Considering this, we present the algorithm for implementing the HACCP system (see Fig. 1), adherence to which will contribute to the effective implementation of the HACCP system in the company and help improve the risk management system.

This figure 1 presents the steps necessary for the effective implementation of the Hazard Analysis and Critical Control Points (HACCP) system in an enterprise. Starting from the first step, which involves developing the HACCP system plan, the process moves through important stages such as forming the HACCP team, defining the scope of the system's application, and developing a comprehensive description of the food product.

The next step involves analyzing hazardous factors and identifying critical control points (CCPs), leading to establishing critical limits for these CCPs. Subsequently, monitoring procedures and corrective actions are developed to implement proper control.

The final steps include conducting verification procedures, which verify the implementation and effectiveness of control measures, as well as documentation and record-keeping to ensure systematic tracking and updating of the HACCP system.

This algorithm helps enterprises systematically and effectively implement and maintain the HACCP system to ensure the safety and quality of their products.

The discussed algorithm helps the enterprise effectively implement and work with the HACCP system. It is important to note that the HACCP system is an effective method for enhancing the enterprise's risk management system. Indeed, improving the enterprise's management system through the implementation of the HACCP system is most evident in the following aspects:

- identification of potential risks: The HACCP system allows for a detailed analysis of all possible risks in production and processing and identifies critical control points where these risks can be most effectively controlled.
- reduction of illness risks: By detecting and controlling the risk of food contamination and products, the HACCP system minimizes the risks of diseases, infections, and other illnesses resulting from consuming food products.

- minimization of production-related risks: Implementing the HACCP system can help avoid production errors and defects, reduce the number of product defects, and minimize returns from consumers.
 - compliance with regulatory requirements: Many countries, like Ukraine and various EU countries, require food enterprises to use HACCP systems to ensure food safety. By implementing this system, companies can comply with regulatory requirements and avoid fines and other penalties.
 - reduction of reputational risks and improvement of brand reputation: Using the HACCP system can increase consumer confidence in the safety and quality of the company's products, thereby enhancing their trust in the company's products. Additionally, the implementation of the HACCP system can lead to:
 - enhanced product quality by identifying and controlling critical points in the production process, ensuring consistency and quality in the final products, leading to improved customer satisfaction.
 - increased efficiency through the systematic approach of the HACCP system, which helps streamline processes, reduce waste, and optimize resource utilization, thereby improving overall operational efficiency.
 - cost savings by preventing food safety incidents, product recalls, and potential legal liabilities, helping save costs associated with product loss, regulatory fines, and legal expenses.
 - market competitiveness by enhancing the company's reputation as a reliable and responsible producer, giving it a competitive edge in the market and attracting more customers.
 - continuous improvement encouraged by the HACCP system through ongoing monitoring, evaluation, and adaptation based on feedback and data analysis, fostering a culture of continuous improvement within the organization.
- Therefore, we see that implementing the HACCP system has a positive impact on risk management and can help improve the enterprise's risk management system.

Conclusions

Improving the risk management system in enterprises through the implementation of the HACCP system is a significant step towards ensuring the safety of food products. As noted, the implementation of HACCP addresses many issues related to potential risks in food safety within the food industry. Identification, assessment, and control of potential hazardous factors ensure the production of safe products.

Among the potential risks influenced by the implementation of the HACCP system, the main ones are those related to reputation issues and their strengthening. This includes weakening consumer trust due to incidents such as poisoning or other safety-related incidents. Compliance with legislative requirements and standards reduces the risk of

administrative penalties and sanctions. Additionally, the most important aspect is that HACCP implementation helps protect consumer health by ensuring that products meet international safety standards. Therefore, the implementation of the HACCP system can help address a range of issues

related to food safety and improve overall risk management in the company.

Thus, the implementation of the HACCP system is a crucial step in ensuring the safety of food products and the efficiency of production at the enterprise, with positive outcomes for both the company and consumers.

Abstract

The article examines the advantages and disadvantages of implementing the HACCP system, providing a detailed algorithm for its integration, especially under the challenging conditions of wartime in Ukraine due to the Russian invasion on February 24, 2022. Businesses today face growing consumer demands, intense market competition, stricter legislative requirements, and the added complexities of operating during conflict. These factors compel them to seek new methods of effective risk management. Despite existing practices, many companies struggle with risk management, particularly in product safety. Critical incidents underscore the necessity of controlling production at all stages.

Enhancing the risk management system through HACCP implementation is crucial for ensuring food product safety, especially during wartime. The integration of HACCP helps address potential risks in the food industry by identifying, assessing, and controlling hazardous factors, thus ensuring safe product production. The mandatory implementation of HACCP principles, as stipulated by Ukrainian law, emphasizes its importance. This system, recognized globally, manages risks and prevents food safety threats, which is vital during instability.

The article proposes an "Algorithm for Implementing the HACCP System" to guide this process. HACCP implementation mitigates various risks, such as consumer health hazards, legal issues, and reputational damage, ensuring compliance with international safety standards, fostering consumer trust, and reducing administrative sanctions. The HACCP system enhances the overall risk management framework within an enterprise. Identification, assessment, and control of hazardous factors ensure the production of safe products.

Recent trends show enterprises face new risks, such as heightened consumer expectations, fierce market competition, and stricter regulatory frameworks. These challenges pressure businesses to find new risk management methods. Despite existing practices, many companies face deficiencies in risk management, particularly in product safety. Incidents of food poisoning highlight the need for stringent control over all production stages.

Among the potential risks influenced by HACCP implementation, the main ones relate to reputation. Weakening consumer trust due to safety incidents can have severe consequences. Compliance with legislative requirements reduces administrative penalties and sanctions. Moreover, HACCP helps protect consumer health by ensuring products meet international safety standards.

The HACCP system is integral to improving risk management methods in enterprises, preventing a range of risks, including consumer health, legal, and reputational risks. By addressing these issues, HACCP implementation significantly contributes to food safety and production efficiency, benefiting both the company and consumers. In conclusion, the HACCP system is crucial for ensuring food product safety and production efficiency, particularly under wartime conditions.

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Посилання на статтю:

Filippov V.Yu. *Improving the Enterprise Risk Management System through the Implementation of the HACCP System* / V.Yu. Filippov, S.O. Neykov, D.O. Shepeliuk, A.M. Shevchenko // *Економіка: реалії часу. Науковий журнал.* – 2024. – № 1 (71). – С. 104-113. – Режим доступу до журн.: <https://economics.net.ua/files/archive/2024/No1/104.pdf>. DOI: 10.15276/ETR.01.2024.13. DOI: 10.5281/zenodo.12119438.

Reference a Journal Article:

Filippov V.Yu. *Improving the Enterprise Risk Management System through the Implementation of the HACCP System* / V.Yu. Filippov, S.O. Neykov, D.O. Shepeliuk, A.M. Shevchenko // *Economics: time realities. Scientific journal.* – 2024. – № 1(71). – P. 104-113. – Retrieved from <https://economics.net.ua/files/archive/2024/No1/104.pdf>. DOI: 10.15276/ETR.01.2024.13. DOI: 10.5281/zenodo.12119438.

