

**MANAGEMENT OF SOCIO-ECONOMIC
TRANSFORMATIONS OF BUSINESS
PROCESSES: CURRENT REALITIES,
GLOBAL CHALLENGES, FORECAST
SCENARIOS AND DEVELOPMENT
PROSPECTS**

Scientific monograph



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The authors of the scientific monograph have come to the conclusion that management of socio-economic transformations of business processes requires the use of mechanisms to support of entrepreneurship, sectors of the national economy, the financial system, and critical infrastructure. Basic research focuses on assessment the state of social service provision, analysing economic security, implementing innovation and introducing digital technologies. The research results have been implemented in the different models of costing, credit risk and capital management, tax control, use of artificial intelligence and blockchain. The results of the study can be used in the developing of policies, programmes and strategies for economic security, development of the agricultural sector, transformation of industrial policy, implementation of employment policy in decision-making at the level of ministries and agencies that regulate the management of socio-economic and European integration processes. The results can also be used by students and young scientists in the educational process and conducting scientific research on global challenges and creation scenarios for the development of socio-economic processes.

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**ENSURING AN
EFFECTIVE
SYSTEM OF THE
SANITARY
CONDITION OF
RESTAURANT
ESTABLISHMENTS
UNDER THE
HACCP**

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Abstract

This article addresses the challenges associated with controlling critical points in a food service enterprise to mitigate the risks of food contamination and ensure workplace safety and overall enterprise well-being.

Keywords: *sanitary conditions, HACCP, hygiene, prerequisite programs, color coding, cross-contamination, disinfection, corrective actions, monitoring, verification, checklist.*

Introduction

The sanitary condition of enterprises stands as a crucial component of state policies globally, and Ukraine is no exception

(Bilousova et al., 2023; Dudarev et al., 2023; (Skrynnyk & Kuzmin, 2022)). The state has implemented a range of documents and programs to systematically oversee the hygiene of equipment, premises, personnel, and production processes, aiming to prevent product contamination and the spread of infectious diseases. Ongoing training and vigilant monitoring of rule adherence ensure that staff comprehends the pivotal role they play in maintaining food safety. Presently, meeting elevated hygiene and safety standards is considered a guarantee for satisfying diverse segments of the population.

The sanitary condition of foodservice facilities hinges on various factors, encompassing adherence to hygiene standards, product quality control, and consumer safety (Moskalchuk et al., 2022; Yurchenko et al., 2022; Zaporozhan et al., 2022). In the foodservice industry, sanitation is not merely a standard but a fundamental prerequisite for ensuring both product quality and safety. Ensuring safe food transcends the mere removal of defects or dirt; it necessitates stringent quality control, adherence to technological production standards, a qualified workforce in the production sector, and effective monitoring at every production stage.

In recent months, amid the legal regime of martial law, Ukraine has enacted several regulatory acts aimed at regulating strategic relations to ensure food security. This paper delves into the significance of sanitary control in fostering reliable and high-quality operations of food service enterprises in the current environment.

Actuality of theme

Maintaining high standards of hygiene is paramount for food companies to ensure the safety and quality of their products. The evolving nature of requirements and standards places significant emphasis on the design of production facilities, the adoption of advanced equipment solutions, and the strict implementation of hygiene standards across all facets of the company. Achieving cleanliness and vigilant monitoring for nonconformities necessitate the utilization of appropriate equipment, which stands as a critical component of a successful program.

Given the perpetual evolution of requirements and standards, continual adaptation and review of these plans are indispensable. Moreover, the training and development of employees regarding

hygiene issues play a pivotal role in ensuring that food establishments are not only safe but also in full compliance with established standards.

The aim of the research is to explore the implementation of prerequisite programs in the catering enterprise, delineating overarching requirements for the organization of production processes and the upkeep of sanitation within the restaurant establishments under scrutiny.

Materials and Methods

The investigation drew upon studies conducted by Ukrainian and international scientists and specialists specializing in food safety issues.

Results and Discussion

(a) Implementation of a prerequisite program at the catering establishment

Restaurant establishments, being food service businesses, should strive to minimize the risk of contamination within their production facilities and dining areas. Achieving this goal requires an understanding of the current sanitary condition of the enterprise and the identification of ways to enhance the safety of production conditions and finished culinary products.

The cornerstone document governing rules and regulations concerning the enterprise's identified problem, particularly its sanitary condition, is the prerequisite program. This program delineates specific requirements tailored to each establishment based on its configuration and location features. These requirements are obligatory and aim to mitigate hazards while exercising control in the processes of raw material storage and the preparation of dishes offered by food service establishments. Adherence to these regulatory requirements ensures compliance with food safety and quality standards in the European Union (Krysanov et al., 2019).

(b) General requirements for the design and equipment of workplaces

Paying attention to hygienic design and construction, proper location, and adequate technical facilities is crucial for effectively

preventing and minimizing hazards. This involves conducting regular safety audits, risk assessments, and implementing appropriate control measures (DSTU ISO 22000:2019, 2019).

Production facilities’ areas should be designed to ensure that equipment and materials are positioned correctly to prevent cross-contamination. To achieve this, production areas (workshops) should be clearly identified and labeled based on their purpose.

The working area of the establishment should be divided into six functional areas, depending on the risk of contamination of raw materials, semi-finished and finished products, and ready-to-eat food. The color coding of functional areas is outlined in Table 4.4.

Table 4.4

Color coding of room areas

Zone color	Zone name
blue	Premises for visitors
green	Production premises
light green	Warehouses
red	Bathrooms
yellow	Service premises
brown	Technical premises

The color coding of a restaurant establishment according to the explication of the premises is shown in Figure 4.10.

The company must take effective measures to prevent cross-contamination. According to a systematic review, the average levels of gluten contamination in certified foods from food service establishments are 42 %, and in industrial products labelled as gluten-free – 13 % (Wieser et al., 2021).

Potentially hazardous food raw materials should be processed in a separate room or in areas (sections) separated by a partition from the areas (sections) where the finished food is produced (Codex Alimentarius, CAC/RCP 39-1993, 1993).

The surfaces of walls, floors and ceilings shall be made of non-absorbent, washable and crack-free materials; in addition, the floor shall be made of non-slip materials. Doors are non-hygroscopic, stable and have a smooth and undamaged surface (National standards body of Ukraine, DSTU ISO 22000:2019, 2019).

Table 4.5

Explication of the premises of a catering establishment

No.	Title	No.	Title
	Premises for visitors		Service premises
1	The lobby, the hall	30	Director's office
2	Dining room	31	Accountant's office
3	Lobby	32	Waiters' and bartenders' rooms
4	Wardrobe	33	Waiters' and bartenders' wardrobe
5	Women's toilet room	34	Staff quarters
6	Men's toilet room	35	Showers, toilets
7	Toilet in the washroom	36	Storage room for cleaning tools and equipment
8	Premises for additional services		
9	Premises for targeted events		
	Production premises		Technical premises
10	Hot department	37	Electrical room
11	Cold department	38	Heating station
12	Bread cutting room	39	Supply air chamber
13	The production head's room	40	Exhaust chamber
14	Tableware dishwasher		
15	Kitchen dishwasher		
16	Egg processing room		
17	Distribution centre		
18	Greenery processing workshop		
19	Preparation shop		
	Warehouses		
20	Booting area		
21	Storekeeper's room		
22	Cooling chamber for storage of dairy products, fats and gastronomy		
23	Cooling chamber for storage of meat and fish semi-finished products		
24	Cooling chamber for storage of fruit and vegetable semi-finished products		
25	Pantry for groceries, wine, spirits and other beverages		
26	Bulk storage room		
27	Vegetable pantry		
28	Engine room		
29	Washing and storage room for containers and equipment		

Depending on the nature of the process operations and the risks involved, buildings and areas, equipment and facilities should be located, designed and constructed in such a way as to (Codex Alimentarius, CAC/RCP 39-1993, 1993): minimise the crossing of process flows, to minimise contamination, and to prevent various

types of contamination by improper containment of chemicals. Surfaces and materials are made of non-toxic and durable materials. Protection against pest access and reproduction was effective.

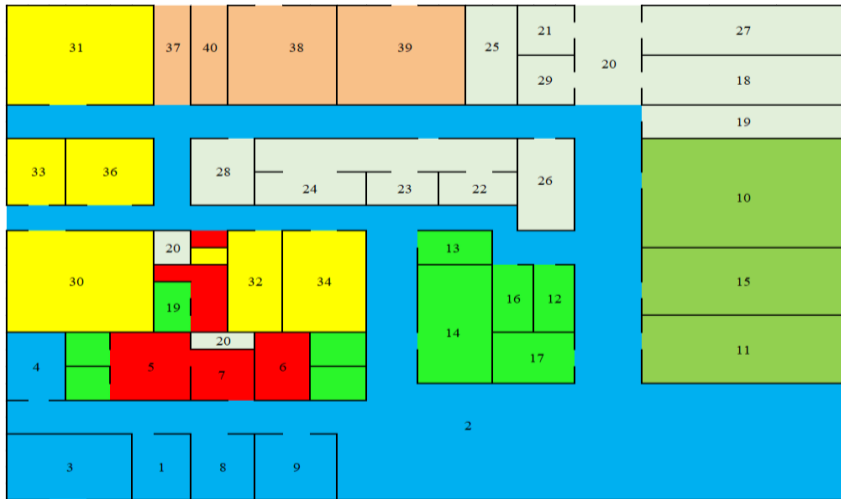


Figure 4.10 Color coding of a restaurant establishment

Cleaners, detergents and disinfectants used for cleaning must be fit for purpose and used in accordance with the manufacturer’s instructions, labelled, stored outside the production area and used in a manner that does not cause food contamination (National standards body of Ukraine, DSTU ISO 22000:2019, 2019).

Highly prepared semi-finished products should be stored in labelled containers with the name and date of preparation. This is to ensure freshness and prevent cross-contamination (Ministry of Agrarian Policy and Food of Ukraine, Order No. 590, 2012).

(c) Sanitary and hygienic requirements for the territory of the enterprise

Passages, aisles and areas located on the territory of the enterprise should be cleaned of garbage daily, watered 2 times a week in summer, and cleared of snow/ice and sprinkled with sand in winter.

Garbage bins should be located away from the loading bay door on a separate, paved area for short-term storage of garbage in

containers with closed lids. Under the influence of COVID-19 and other global viruses, establishments should use red bins with a capacity of 60 to 120 liters, equipped with a durable red garbage bag, pedal and lid with special COVID-19 labelling, for temporary waste storage (World Health Organization, 2020).

Storage should be carried out in closed labelled containers for no more than one shift, and the amount of waste should not exceed 60%. Containers must be located separately from food storage areas in a closed area (Ministry of Agrarian Policy and Food of Ukraine, Order No. 590, 2012).

Waste storage areas shall be kept in good condition. Transport intended for the removal of containers and waste bins is prohibited for the transport of food raw materials and finished products (National standards body of Ukraine, DSTU ISO 22000:2019, 2019).

The responsible cook of the catering establishment must ensure that there are mats for cleaning shoes and a yellow warning sign “wet floor” at the entrance.

Every month, on sanitary days, the area should be cleaned, equipment, walls, and floors should be washed using detergents and disinfectants approved by the Ministry of Health of Ukraine for these purposes (Resolution of the Cabinet of Ministers of Ukraine No. 863, 2023).

The fast food outlet shall be cleaned at least once a week, and the floor shall be cleaned as needed.

In order to prevent cross-microbial contamination, a multi-layer disinfectant mat is placed at the entrance/exit to the restroom to disinfect the soles of shoes. The sanitary condition is checked by a permanent commission (HACCP group) appointed by an enterprise order after the sanitary day.

(d) Sanitary and hygienic requirements for the production area

As a rule, the minimum size of the production area should be at least 7 m².

The walls, partitions, structures and equipment in the production area shall be painted in light, cool colors. Paints are used in such a way as to avoid the release of chemicals into the air, but they must have positive conclusions from the state sanitary and epidemiological examination.

Floors and stairs should be kept clean and free from slippery surfaces caused by spilled grease, water mixtures and other substances. The choice of flooring depends on the facility and its operations, such as the collection of raw materials, food production, preparation, processing and use of materials in processes that may be exposed to water (Rahman, et al., 2020).

Walls, doors and fixtures in production areas should be wiped down and have protective devices to prevent contamination and product damage. Ventilation systems and exhaust devices should be designed to maintain temperature and humidity requirements.

(e) Sanitary and hygienic requirements for the administrative and amenity area

The group of service and amenity areas is designed in a single zone, connecting it to the groups of production areas by corridors. The wardrobes are designed for street and work clothes, with the number of storage spaces according to the number of employees in the shift. Separated by partitions for clean and soiled workwear, they are equipped with clothes hooks. Recreation areas are sized according to the number of employees, but not less than the minimum required. Amenity areas are regularly cleaned with hot water and disinfectants, using special equipment and toilet disinfectants.

Bathrooms should be cleaned with separate equipment that is not used for cleaning other areas. This will help prevent the spread of pathogens (Barber & Scarcelli, 2009).

The washroom should be provided with a “checklist” that indicates the schedule for cleaning the washroom.

(f) Sanitary and hygienic requirements for raw materials, technological process and finished products

All food and non-food products supplied to the company, as well as food and beverages produced, must comply with applicable regulations.

The condition of ingredients, packaging and other materials must be checked and confirmed before they are approved. Raw materials and components that require special storage conditions (e.g. a certain temperature) are systematically checked and recorded to confirm that

the required storage conditions are met (Gál & Demény, 2015).

Raw materials with bacterial contamination exceeding the permissible limits (butter, cow's milk), according to the conclusion of the company's bacteriological laboratory, can only be used for the production of semi-finished products, such as baked or liquid products made with the use of high temperatures (Park et al., 2007).

(g) Cleaning equipment

Cleaning equipment includes all tools used for cleaning floors, walls, doors, windows, plumbing, etc.: mops for wet cleaning, mop holders, mobile units with buckets for clean and dirty water, brushes and dustpans for dry cleaning, stiff brushes for surfaces and seams, napkins, sponges, rubber gloves. Cleaning equipment for production units is intended for spot cleaning by personnel only in designated areas.

Where necessary, devices for disinfecting tools and equipment should be available. These devices should be made of corrosion-resistant, easy-to-clean materials and be connected to a hot and cold water supply (Codex Alimentarius, CAC/RCP 39-1993, 1993).

For cleaning and disinfection, use a washing bath with hot and cold water and special disinfectant solutions. The enterprise must have the necessary means for washing, drying and disinfection, as well as handwashing sinks activated by foot, knee or sensor. Toilets for staff are located to avoid the risk of contamination.

(h) Monitoring and corrective actions in case of non-compliance

The HACCP Team Leader controls the sanitisation of the production areas, dining room, warehouse and administrative areas.

In case of violation of sanitary requirements, the staff notifies the production manager. The latter determines the degree of danger, corrects the situation and notifies the director to stop production. The director or his acting director can stop the process. Once corrected, it is necessary to avoid recurrence by finding out the cause and eliminating it. This requires the knowledge and responsibility of employees, so the correction procedure has a clear procedure and roles assigned to employees.

(i) Verification of the background programme

Market operators analyse the hazards that may arise from the use of water and auxiliary materials for food processing, food contact items and materials. Based on the results of such studies, control measures are developed and implemented (Baba & Esfandiari, 2023).

If verification is based on testing of samples of final products or direct sampling from the process, and the tests reveal that the samples do not meet the acceptable level of food hazard, then the organisation should treat the questionable part (batch) of the product as potentially hazardous and take corrective actions (National standards body of Ukraine, DSTU ISO 22000:2019, 2019).

(j) Staff training

The production manager is responsible for briefing and familiarising production personnel with the requirements. The briefings are: initial, when the document is put into effect, periodic, which is completed every six months, and extraordinary when making changes to the prerequisite programmes and when taking corrective actions. The employee must personally sign to confirm that he or she understands the requirements of this prerequisite programme.

Conclusions

Due to the growing importance of the sanitary condition of food establishments, the results of the work emphasise the importance of systematic monitoring and training of staff on hygiene standards to prevent food contamination and disease. The sanitary condition of food establishments is a crucial factor in ensuring product quality and safety. Prerequisite programmes and appropriate equipment for monitoring industrial hygiene prove to be key components in this process. The joint efforts of government, businesses and consumers are essential to create a safe food system.

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