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IX

**INTERNATIONAL SCIENTIFIC
AND PRACTICAL CONFERENCE
"DEVELOPMENT OF INNOVATION SYSTEMS: TRENDS,
CHALLENGES, PROSPECTS"**

Hamburg, Germany

March 04-07, 2025

ISBN 979-8-89692-739-6

DOI 10.46299/ISG.2025.1.9

DEVELOPMENT OF INNOVATION SYSTEMS: TRENDS, CHALLENGES, PROSPECTS

Proceedings of the IX International Scientific and Practical Conference

Hamburg, Germany
March 04 – 07, 2025

UDC 01.1

The 9th International scientific and practical conference “Development of innovation systems: trends, challenges, prospects” (March 04 – 07, 2025) Hamburg, Germany. International Science Group. 2025. 364 p.

ISBN – 979-8-89692-739-6

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PEST CONTROL MEASURES, SPECIES IDENTIFICATION, INFESTATION PREVENTION, PREVENTIVE ACTIONS, AND PEST MANAGEMENT STRATEGIES

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Introduction. Ensuring food safety in food service establishments requires effective pest control. Integrated Pest Management (IPM) combines various methods to protect products while minimizing environmental and human health impacts [1]. A key component of IPM is pest monitoring, which allows for early detection, timely implementation of control measures, and evaluation of their effectiveness. Storage conditions significantly affect pest viability, making their consideration crucial for developing effective control strategies [2].

Actuality of the theme. Pests pose a serious threat to the operation of food service establishments, as they can cause significant damage to food products, equipment, and facilities. In addition to material losses, their presence creates health risks for consumers, deteriorates service quality, and consequently has a negative impact on the establishment's reputation [3]. Thus, a comprehensive approach to pest control and prevention is a vital aspect of the competitiveness and sustainable development of food service enterprises. This ensures safe conditions for consumers and helps maintain a high level of customer trust.

Materials and methods. The research analyzed regulatory documents from both international and Ukrainian researchers that define standards and requirements for food safety and regulate pest control practices.

Results and discussions.

General requirements. Significant attention in food service establishments is given to monitoring the quality of food storage. The responsible chef must regularly inspect the condition of raw materials and semi-finished products stored in refrigerators and freezers, as pests (flies, cockroaches, and rodents) can transmit pathogens of food

poisoning, intestinal infections, and helminth eggs. All products must be stored in airtight containers and closed cabinets [4].

To minimize risks, access to areas where food processing takes place should be restricted. All visitors to such areas (inspection officers, technical staff, etc.) must wear protective clothing and comply with food safety requirements as outlined by national and international standards [5].

Food service establishments must implement effective pest control measures, such as using electric insect killers, bactericidal lamps, and chemical agents to combat cockroaches and flies. These measures must be carried out by qualified personnel and accompanied by proper documentation of pesticide usage [6].

Sanitary measures to prevent contamination. The premises of the establishment must be designed to prevent pest intrusion and minimize the risk of food, drinking water, equipment, or site contamination [7]. Sanitary and technical measures include sealing gaps and openings that could serve as entry points for pests and regularly maintaining ventilation and other openings to prevent pest entry [4].

Practical pest control measures. Mechanical, chemical, biological, and electronic methods are used to eliminate pests. This includes electric insect killers, bactericidal lamps activated after business hours, and screens on ventilation and window openings. Additionally, disinsection (the extermination of flies, cockroaches, and other insects) and deratization (the extermination of rodents) are conducted. These services are typically provided by specialized companies under formal agreements.

Waste management. To prevent pest proliferation, it is also essential to ensure proper disposal of food waste. It should be collected in sealed bags or containers, which must be cleaned and disinfected daily. Trash bins should be placed on paved areas away from the kitchen and protected from pests. Enterprises must also have an effective wastewater disposal system: drainage pipes should be installed separately from drinking water supply pipelines to prevent contamination [4-8].

Staff training. Staff training plays a crucial role in ensuring sanitary safety. Department managers should conduct regular briefings, including initial, periodic, and unscheduled sessions as needed. Employees must have knowledge of HACCP system fundamentals in line with their job responsibilities.

Verification and control of measures. Regular verification is conducted to assess the effectiveness of implemented measures. This may include analyzing the final product, comparing its quantity with the amount of ingredients used, and evaluating risks [8]. All verification results are documented and shared with relevant stakeholders. If discrepancies are identified, the product is considered potentially unsafe, and corrective actions are taken [9].

Conclusions. Pests pose a serious threat to food service establishments, as their presence can lead to significant spoilage of products, damage to equipment, and deterioration of facilities. Beyond material losses, they create risks to service quality and consumer safety, which negatively impacts the reputation of food service establishments. To ensure food safety and protect consumers, establishments must implement a comprehensive approach to pest control. This approach should include

preventive measures aimed at preventing pests from entering the premises and active strategies for effectively addressing existing issues.

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