

Food Safety Management and Its Role in Protecting Public Health

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Abstract

Food safety is a critical aspect of food science that focuses on preventing foodborne hazards and ensuring that food products are safe for human consumption. It encompasses practices related to food handling, processing, storage, and distribution to minimize biological, chemical, and physical risks. With increasing globalization of the food supply chain, effective food safety management has become essential to protect public health. This article highlights the importance of food safety systems, risk assessment, and regulatory frameworks in maintaining safe food standards.

Keywords: Food safety, Foodborne hazards, Risk assessment, Food regulations, Public health

Introduction

Food safety refers to the conditions and practices that preserve the quality of food and prevent contamination that could cause illness or harm to consumers. Unsafe food can result from microbial contamination, chemical residues, or physical hazards introduced during production and processing [1]. Ensuring food safety requires a comprehensive understanding of potential hazards and the implementation of preventive measures across the entire food supply chain. The globalization of food trade has increased the complexity of food safety management, as food products often pass through multiple processing and distribution stages before reaching consumers [2]. Food safety systems such as hazard analysis and risk-based controls help identify critical points where contamination may occur and allow for timely intervention. These systems are essential in reducing the incidence of foodborne diseases and maintaining consumer trust. Advancements in food safety research have also led to the development of improved detection methods for contaminants and pathogens, enabling faster and more accurate risk assessment [3]. Regulatory agencies rely on scientific evidence generated through food safety studies to establish

standards and guidelines that protect public health. Thus, food safety remains a cornerstone of food science and an essential component of sustainable food systems.

Conclusion

Food safety is fundamental to safeguarding public health and ensuring consumer confidence in the food supply. Through effective risk assessment, preventive controls, and regulatory compliance, food safety management minimizes the occurrence of foodborne illnesses. Continuous improvement in food safety practices and scientific research will be crucial in addressing emerging challenges within the global food industry.

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