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Post-Harvest Technology for Reducing Losses and Maintaining Food Quality

Samuel O. Adeyemi*

Department of Agricultural and Food Engineering, University of Ibadan, Nigeria,

***Corresponding author:** Samuel O. Adeyemi, Department of Agricultural and Food Engineering, University of Ibadan, Nigeria,

Email: samuel.adeyemi.postharvest@agri-research.ng

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Abstract

Post-harvest technology focuses on the handling, storage, processing, and transportation of agricultural produce after harvest to reduce losses and maintain quality. Improper post-harvest practices can lead to significant food losses, reduced nutritional value, and economic challenges. The application of appropriate post-harvest technologies enhances food safety, extends shelf life, and ensures year-round availability of food products. This article discusses the role of post-harvest technology in improving food quality and reducing post-harvest losses.

Keywords: ***Post-harvest technology, Food losses, Quality maintenance, Storage, Food safety***

Introduction

post-harvest technology encompasses a range of practices designed to preserve the quality and safety of agricultural produce after harvesting. Fruits, vegetables, grains, and other commodities are highly perishable and susceptible to mechanical damage, microbial spoilage, and physiological deterioration [1]. Additives can be derived from natural or synthetic sources, depending on their intended application and regulatory approval. Preservatives are among the most widely used food additives, as they inhibit microbial growth and delay spoilage in perishable foods [2]. Chemical indicators such as lipid oxidation and enzymatic activity also play a significant role in determining shelf stability, particularly in fat-rich and processed foods [3]. Sensory evaluation complements analytical methods by assessing consumer acceptability in terms of taste, odor, color, and texture [4]. Shelf-life studies are also important for regulatory compliance, as food manufacturers must provide accurate expiration dates and storage instructions based on scientific evidence [5]. Together, these approaches ensure that shelf-life evaluation supports food safety, quality control, and consumer trust.

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Conclusion

Post-harvest technology plays a vital role in reducing food losses and maintaining the quality and safety of agricultural products. Through proper handling, storage, and transportation, it supports food security and economic sustainability. Ongoing innovation and adoption of effective post-harvest technologies will remain essential for strengthening global food supply systems. Their successful application requires careful formulation, scientific validation, and regulatory compliance. Ongoing research will further expand the use of natural preservatives in sustainable and health-oriented food production. Food additives play a significant role in improving food quality, safety, and shelf life in modern food systems. When used responsibly and regulated effectively, they contribute to product stability and consumer satisfaction. Ongoing research and regulatory oversight are essential to ensure the safe and beneficial use of food additives in the global food industry.

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