Foods packaged in antimicrobial materials.

John Knill*

Department of Packaging Science, Clemson University, Clemson, USA

Introduction

The use of antimicrobial compounds in food packaging has emerged as a game-changer in a world that is becoming increasingly concerned with food safety, quality, and sustainability. These cutting-edge materials are designed to accomplish much more than merely retain and safeguard our food; they actively combat microbial contamination and lengthen the shelf life of perishable goods [1].

The days when packaging was only used to store and carry food are long gone. Modern food packaging performs a number of tasks including product preservation, information dissemination, convenience, and safety enhancement. By actively preventing the growth of bacteria, yeasts, and molds-major contributors to food spoiling and health risks-antimicrobial packaging takes these tasks to the next level [2].

Antimicrobial substances prevent the growth of dangerous germs, hence lowering the risk of foodborne diseases. For perishable goods like meat, dairy, and fresh produce, this is especially important. The potential of antimicrobial packaging to increase product shelf life is one of its most important benefits. Food can stay fresh for longer periods of time by slowing down microbial deterioration, which reduces food waste and benefits both customers and producers [3].

Food quality and freshness must be maintained if customers are to be happy. Antimicrobial packaging ensures that food meets consumer expectations by preserving food's flavor, texture, and nutritional content. Antimicrobial packaging helps with sustainability efforts by decreasing food waste. It lessens the need for artificial preservatives and enables consumers to use products completely rather than throwing them out too soon due to deterioration [4].

Food products ranging from fresh vegetables and baked goods to meat and dairy have used antimicrobial packaging. It is especially useful for ready-to-eat foods since they might degrade quickly. Additionally, because they are particularly vulnerable to bacterial infection, fish and poultry products can benefit considerably from these components. We may anticipate even more creative applications for antimicrobial materials in food packaging as technology and research develop. These might include ongoing advancements in shelf life extension, packaging that adjusts to environmental conditions, and real-time monitoring of food safety [5].

Conclusion

A revolutionary improvement in food safety and preservation is the packaging of antimicrobial foods. They have a number of advantages, including increased food safety, increased product quality, longer shelf lives, and a smaller environmental effect. This technology has the potential to revolutionize how we produce, package, and consume food as it develops, making the world's food supply safer, more sustainable, and more convenient for consumers.

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***Correspondence to:** John Knill, Department of Packaging Science, Clemson University, Clemson, USA. Email: knill@john.edu

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