

UTILIZATION OF BIOPOLYMER PACKAGING MATERIALS IN SUPPORT OF SUSTAINABLE DEVELOPMENT

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Abstract

Packaging is an essential part of everyday life, protecting products, enabling transportation, and contributing to their market success. However, in the context of the growing focus on sustainable development, packaging becomes a key point for innovation and a change in the way we think about products and their protection [1]. Transitioning from a linear to a circular-cyclic industrial system, discarded packaging becomes a raw material in the next production cycle [2]. This system, often referred to as the concept of a circular economy, represents an innovative approach based on sustainability and waste minimization in production and consumption processes. The circular economy connects economic and ecological aspects in an innovative way and sets an ambitious goal to reduce the environmental footprint of the industry [3]. The principle of sustainability applied in the packaging industry is reflected in the approach that considers the life cycle (LCA - life cycle analysis) with an emphasis on material optimization, water and energy savings, waste reduction, and achieving maximum recovery through recycling, incineration, or composting [1]. From an ecological perspective, biopolymer packaging offers a significant advantage, as it is often biodegradable and environmentally friendly [4]. The use of biopolymers helps reduce environmental pollution, lower harmful gas emissions, and supports the principles of a circular economy, making them environmentally friendly alternatives to conventional plastics. The social aspect is also significant, as the use of sustainable packaging and biopolymers can improve consumer health and create jobs in the sustainable industry sector [5]. Sustainable packaging requires collaboration and innovation in all sectors of the economy to achieve sustainable development. When it comes to consumer awareness, ecology, resource conservation, and environmental protection, sustainable packaging becomes a key element in the market. As such, packaging has the potential to play a significant role in achieving sustainable development goals and preserving the planet for future generations.

References

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