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A New Food Safety Trick for Plastics in a Circular Economy

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Abstract

As part of their action plan for a circular economy, the European Union approved a European strategy for plastics in 2018. The plastics plan, which aims to address how plastics are created, used, and recycled in the EU, is driven by sustainability. One of the plans calls for all plastic packaging placed on the EU market by 2030 to be either reusable or capable of being recycled efficiently. Multi-layered plastic food packaging, which is not cost-effectively recyclable, makes up a sizable share of the industry. What effects would the European Union's initiatives for plastics in a circular economy have on food safety given the challenges connected with recycling today's sophisticated food packaging? This piece investigates what is now being done and what may be done to reduce the dangers to food safety while upholding the EU's plastic policy. Plastic has been found to be essential for preserving food safety, prolonging shelf life, and reducing food waste.

Keywords: Anaerobic Biodegradation, Biodegradable Confetti, Biodegradation, Biodegradation

Introduction

However, multi-layer plastic packaging, which is commonly used in the food sector, cannot currently be recycled, and there are no workable substitutes that provide the same level of protection. Without the possibility of developing alternatives to multi-layer plastics that provide the same level of food protection, there will be negative effects on food quality, safety, and shelf-life, which will increase food waste, increase food costs, and reduce the variety and availability of some foods. The Elsevier Ltd. is the publisher. The CC BY licence governs this open access article. In today's culture, plastic has an important and expanding function. It offers several advantages, notably in terms of food safety and preservation, and it may also assist decrease food waste. The Ellen MacArthur Foundation notes that plastic packaging may give excellent performance, such as increasing product shelf-life, and is affordable, resulting in immediate economic benefits [1]. Plastic packaging is also lightweight, which can have environmental benefits such as lower travel costs [2]. Plastic wrapping might greatly lessen the total environmental effect of creating the food itself by minimising food waste, according to Yun [3]. However, there are negatives to plastic packing as well, including environmental issues [4]. Geueke names a few of these issues, including high manufacturing volume, short concerns with usage time, trash management, and littering [5].

Discussion

The non-biodegradable nature of plastic, according to Cordier and Uehara, is raising concerns about the ever-increasing buildup of plastic in our seas and natural surroundings [6]. The European Union introduced "A European Strategy for Plastics in a Circular Economy" in 2018 to assist solve the environmental problems associated with plastics and advance toward a more sustainable model for economic development [7]. "By 2030, all plastics packaging placed on the EU market is either reusable or can be recycled in a cost-effective way," is one of the primary objectives listed in the plastics policy [8]. Modern food packaging frequently comprises of many layers consisting of various plastic polymer kinds [9]. According to Johannes Remmele of the packaging company Südpack, multi-layer packaging can include oxygen barriers are one possibility provided by ultra-thin layers [10]. These packaging options provide the best protection for the food, increase shelf life, and minimise food waste while using less raw materials and producing less CO_2. However, Dilkes-Hoffman point out that recycling these multi-layer plastics presents significant issues due to either high prices, technological challenges in sorting the various plastic polymers, or the impossibility of recycling mixed polymers. According to Faraca and Astrup (2019), the enormous varieties of polymers that make up plastics make it one of the most difficult materials to recycle. What effects will the European Union's initiatives for plastics in a circular economy have given the challenges connected with recycling today's sophisticated food packaging food security In accordance with the EU's plastic policy, this article investigates what is being done and what may be done to reduce the dangers to food safety.

Conclusion

In order to put the European Union on the path of the transition towards a more sustainable model for economic development, the Commission established a Circular Economy Action Plan in December." Bocken differentiates between a linear economy and a circular economy. The circular strategy focuses on continuously reusing materials in an economically feasible fashion and using renewable resources wherever possible, as opposed to the linear approach, which takes-makes-uses-disposes and wastes a lot of resources. Moraga, however, argues that the idea of a circular economy is not so clearly defined and that the emphasis should instead not just focus on recycling as a means of material preservation, but also considers the full life cycle, including any environmental, social, or economic implications. The definition provided by Murray takes a far broader view of what a real circular economy entails: "An economic model where planning, resourcing, procurement, production, and reprocessing are planned and controlled, as both processes and outputs, to maximise ecological functioning and human well-being". The EU's action plan aims to minimise waste while maximising the value of resources and commodities, keeping them in the economy for as long as feasible. According to the EU, shifting to

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a more circular economy will provide Europe a long-term economic advantage.

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Conflict of Interest

None

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