

Editorial

Food Waste: Treatments, Environmental Impacts, Current and Potential Uses

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Introduction

Food waste is a major environmental and social concern, and its impact will most likely increase as the population grows. The Food and Agriculture Organization of the United Nations (FAO) has predicted that by 2050, food production will increase by more than 70% to feed 9.1 billion people [1].

Impactful images are related to waste generated at the crop level, where every day large quantities of fruit and vegetables are discarded for not meeting the sales standard, in terms of size and general appearance. In industrialized countries, over 50% of the production of roots and tubers and about 46% of fruit and vegetable production is lost or wasted, considering the edible parts of food products produced for human consumption.

Moreover, in the agri-food chain during the processing and transformation of food products, significant quantities of by-products and waste are generated, the disposal of which produces negative environmental and economic impacts. The adoption of an industrial symbiosis approach to transfer and share resources between different industries reflects recent European strategies on decoupling economic growth from environmental impacts.

Therefore, it is necessary to study sustainable food systems that guarantee nutrition, health, and food safety, with the intention of not compromising the economic, social, and environmental circumstances of future generations.

To achieve this sustainability, we need to think about multidisciplinary integrated approaches from farm to house.

One of the main challenges of the sustainable management of food industry waste according to the “zero waste” model is the application of the circular management strategy with the inevitable development of innovative waste transformation techniques.

Agro-industrial supply chains provide numerous high-value-added by-products, and the exploitation of green extraction techniques is gaining particular interest with regard to the recovery of bioactive substances from waste and by-products of the food industry with the aim of providing faster, more efficient, safer, and more sustainable alternatives to conventional extractions.

Understanding how these natural compounds interact with biological targets opens their use to pharmaceutical interest, but also to those engaged in “food science”, for example in the production of functional foods, food supplements, food preservatives, cosmetics, etc. [2–4].

The Special Issue, entitled “Food Waste: Treatments, Environmental Impacts, Current and Potential Uses”, will focus on original scientific reviews and papers relating to all types of food production, waste/by-product generation and their use, value products added (bulk chemicals, fine chemicals, high-value compounds: enzymes, proteins, polyphenols, etc.), new technical and technological solutions, environmental compatibility, life cycle analysis, and the legislation without which there is no implementation.



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