



African Journal of Food Science and Technology (ISSN: 2141-5455) Vol. 13(4) pp. 01-02, April, 2022
DOI: <http://dx.doi.org/10.14303//ajfst.2022.018>
Available online @<https://www.interestjournals.org/food-science-technology.html>
Copyright ©2022 International Research Journals

Rapid Communication

A look at the latest developments in food science and technology, including processing, safety and packaging

Victoria Kings*

Department of Food Science, Jiangsu Key Laboratory of Pesticide Science, China Agricultural University, Beijing, China

E-mail: kings@victoria.cn

Abstract

While the global population continues to grow, the Earth's ability to replenish its resources is deteriorating. As a result, the bio-resources needed for food production are depleting, necessitating new techniques to feed the existing and future world populations. Scientists have devised revolutionary techniques to reduce food loss and waste, boost food production, discover new ingredients, design and construct new food structures, and integrate digitalization into the food system throughout the previous few decades. We give a broad overview of the circular economy, alternative food production technologies such as cellular agriculture, and new sources of ingredients such as microalgae, insects and wood-derived fibres in this paper. We give a description of the entire process of food design, including artificial intelligence, augment and virtual reality and block chain technology, which supports food development and digitalization in the food business.

Keywords: Food, Techniques, Advance technology

INTRODUCTION

Food packaging system innovations will help address the market's increasing needs, such as customer preference for "healthy" and high-quality food products and the decrease of food packaging's negative environmental impacts. Active and intelligent packaging technologies are emerging concepts that provide a variety of new options for extending shelf life and increasing food quality and safety. There are also innovative techniques to enhance passive food packaging qualities like mechanical strength, barrier performance, and thermal stability. The use of edible or biodegradable materials, plant extract and Nano-materials in the development of sustainable or green packaging has the potential to lessen the environmental implications of food packaging. Active intelligent and environmentally friendly packaging technologies can all work together to create a multipurpose food packaging system (Anderson et al., 2009).

However, the advantages of eating novel and improved food products are insufficient to influence customers. Food acceptance and demand vary widely over the world, depending on factors such as geographic location, society structure, economy, personal income, religious restraints and accessible technology. Low-income countries prioritise food safety and nutritionally adequate foods whereas middle and high income countries prioritise foods that minimise the risk of chronic disease as well as functional and ecologically friendly foods. Food has developed from a tool to prevent nutrition-related diseases, improve human physical and mental well-being, and slow/control ageing to a tool to prevent nutrition-related diseases enhance human physical and mental well-being and slow/control ageing. As a result consumer's requirements and demands should be considered when developing new food products. Despite this personal income can limit access to sufficient food for survival. Let alone new and improved food products with additional benefits across countries (Azuma et al., 2015).

Received: 31-Mar-2022, Manuscript No. AJFST-22-018; **Editor assigned:** 02-Apr-2022, PreQC No. AJFST-22-018 (PQ); **Reviewed:** 16-Apr-2022, QC No. AJFST-22-017; **Revised:** 22-Apr-2022, Manuscript No. AJFST-22-017 (R); **Published:** 29-Apr-2022

Citation: Kings V (2022). A look at the latest developments in food science and technology, including processing, safety, and packaging. AJFST. 13: 018.

The supply chain once integrated into the food system offers solutions to achieve global food sustainability by reducing the demand for fresh raw materials in food production, minimising food loss and waste promoting efficient use of natural resources and mitigating biodiversity loss by retaining resources within a loop i.e., the resources are used in a cyclic process. This efficient use of natural resources for food in a circular economy contributes to biodiversity restoration by limiting further conversion of natural habitats to agricultural land, which is one of the leading causes of biodiversity loss (Bain et al., 2013).

Finally, fibre must be included in the diet in addition to proteins, lipids and digestible carbohydrates. Dietary fibres are made up of soluble and insoluble components that are widely consumed through fruits, vegetables, cereals and grains. Despite the fact that adequate dietary fibre intake has a number of health benefits, the growth of low fibre foods, particularly in Western countries have resulted in low dietary intake. The desire for fibre supplementation in functional foods arose from the shortage of eaten dietary fibres (Caporgno et al., 2018).

Sources of dietary fibres include food crops, vegetables fruits and wood. The use of plant-based derivatives and waste aligns with the circular bio economy framework and contributes to the sustainability of the food chain. Food packaging, which is part of the Design for food sub discipline, is projected to play a key role in reducing food waste and loss. Consumer-level remedies to food waste/loss include, for example the design of resalable packages, portion size considerations and unambiguous labelling of best by and expiration dates. Although a clear understanding of the interdependency of food waste and packaging design in the circular economy has yet to be established the most efficient option has been to design smart packaging to extend the shelf life and quality of highly perishable foods such as fresh vegetables, fruits, dairy and meat products. Digitalization has the potential to change our perceptions of food and aid in the resolution of unhealthy eating habits. It is believed that in the future, AI will provide a greater understanding of how the neural network in the human brain interacts to food, allowing customers can choose healthier diets (Lynch et al., 2018).

CONCLUSION

First, we need to fully transition from a linear to a circular economy where side streams and waste are valorised as new sources of food materials/ingredients, leading to more efficient use of the available bioresources. Secondly, food production has to increase. For this vertical farming, genetic engineering, cellular agriculture and unconventional sources of ingredients such as microalgae, insects and wood-derived fibres can make a valid contribution by leading to a more efficient use of land, an increase in food and ingredient productivity, a shift from global to local production which reduces transportation, and the transformation of non-reusable and inedible waste into ingredients with novel functionalities. However, to obtain acceptable sustainable food using novel ingredients and technologies, the aid of food design is necessary in which conceptualization, development and engineering in terms of food structure, appearance, functionality and service result in food with higher appeal for consumers. To complement these solutions, digital technology offers an additional potential boost. Indeed, AI, block chain, and VR and AR are tools which can better manage the whole food chain to guarantee quality and sustainability, assist in the development of new ingredients and structures and change the perception of food improving acceptability, which can lead to a reduction of food-related diseases.

REFERENCES

- Anderson JW, Baird P, Davis RH, Ferreri S, et al., (2009). Health benefits of dietary fiber. *Nutr Rev.* 67: 188-205.
- Azuma K, Nagae T, Nagai T, Izawa H, Morimoto M, et al., (2015). Effects of surface-deacetylated chitin nanofibers in an experimental model of hypercholesterolemia. *Int J Mol Sci.* 16: 17445-17455.
- Bain LE, Awah PK, Geraldine N, Kindong NP, Sigal Y, et al., (2013). Malnutrition in sub-saharan africa: burden, causes and prospects. *Pan Afr Med J.* 15: 120.
- Caporgno MP, Mathys A (2018). Trends in microalgae incorporation into innovative food products with potential health benefits. *Front Nutr.* 5: 58.
- Lynch H, Johnston C, Wharton C (2018). Plant-based diets: Considerations for environmental impact, protein quality, and exercise performance. *Nutr.* 10: 1841.