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Perspective

Authentication of Good Manufacturing Practices in Food Safety

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DESCRIPTION

The microflora of foods is highly important to food producers, processors, and consumers, and food makers, including distributors, are reacting to customers' need for food items that are safe, fresher, and easier to use. Occasionally foods may have been cooked improperly or infected with germs that cause spoilage or human bacterial infections. Implementing plans and Good Manufacturing Practises (GMP) should be made easier for the food industry, regulatory bodies, and consumers with knowledge of the bacterial populations in food systems before and after processing, as well as the effects of storage time and temperature on microbial populations of minimally processed foods.

Food companies are searching for alternative technologies to create higher-quality meals, maintain customer safety and affordability, and enhance food safety by lowering or eliminating foodborne bacterial infections in response to consumers' desire for fresh, healthful, nutrient-dense foods. Similar to this, different revolutionary processing methods might be applied to create meals with improved functional and nutritional qualities, minimize carbon footprint, and utilize a significant amount less water during heat-transfer operations. These innovative processing ideas include hurdle (combined-applications) techniques and sophisticated thermal and non-thermal technology that leverages mechanical, electrical, and electromagnetic energy. In this concern, it was discussed how some novel technologies and processing methods differ from conventional processing in terms of the types of foods they process, the efficacy and destruction models of microorganisms, the desired and unintended effects on food quality, and the economic and environmental costs and benefits. This special issue discusses seven of these cutting-edge methods for processing food, including High Pressure Processing (HPP), Electrical Impedance Spectroscopy (EIS), ultrasound, low water activity food, hoover frying, an inventive transduction process to deliver safe fresh snacks, and a technique to prevent false labelling. Heat-sensitive beverages, solid foods, such jams and jellies, fruit juices, ham, cooked ready-to-eat meat products, and marine goods like oysters, have all benefited from high Hydrostatic Pressure Processing (HPP). In this special issue, it was demonstrated how raw beef liver may be processed at high hydrostatic pressures of 400 MPa and 500 MPa while yet maintaining its natural texture.

This processing efficiently destroys microorganisms and renders raw cow liver safe for ingestion. On the other hand, liver tissue exposed to low HPP got harder and became pale, making it unfit for consumption foods. Despite the presence of fungal infection, study into the microbiological safety of low water activity food found that certain of these foods may pose harm to the public's health. At both low and high temperatures, the spore-forming bacteria are capable of associate. As a result, they proposed that combining several non-thermal treatments would be helpful in regulating the safety and quality of foods with low water activity. Electrical Impedance Spectroscopy (EIS) is a powerful analytical method that has been widely used in the food industry to evaluate the quality and safety of food. In this special issue, techniques for online EIS detection were developed to take the role of conventional ones. These approaches assure excellent grading of meat and fish while saving time, money, and labour. Discussed the effects of frying on the texture and colour of cassava root slices chips and recommended hoover frying at 118°C for 8 minutes to retain the chips' qualitative characteristics. This basic though novel technological aspect could improve product quality and consumer acceptance. According to their systematic review, the use of ultrasound in food results in high-frequency vibration, which changes the physical, chemical, and functional characteristics of the meal. Food quality may be maintained and germ reduction can be improved by combining ultrasound with a sanitizing agent.

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