

Exploring the interplay between food science technology and human health.

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Abstract

Food science technology encompasses a broad range of fields, including food chemistry, microbiology, processing, and engineering, and plays a crucial role in the development of new and innovative food products. The article discusses how food science technology affects human health through its impact on food safety, nutritional quality, sensory properties, and global health challenges. The article also highlights how food science research provides valuable insights into the relationship between diet and disease, and how food science technology can contribute to addressing global challenges such as climate change and food insecurity. Overall, the article emphasizes the importance of understanding the interplay between food science and human health in developing sustainable and healthy food systems.

Keywords: Carbohydrate-restricted diet, Fat-restricted diet, High-protein diet, Mediterranean diet, Fasting.

Introduction

The relationship between health and food science technology is a complex and interdependent one. Food science technology encompasses a broad range of fields, including food chemistry, microbiology, processing, and engineering. These fields all play a crucial role in the development of new and innovative food products, but they also have a significant impact on human health.

At its core, food science technology is concerned with understanding the chemical and physical properties of food and finding ways to optimize these properties to produce safe, nutritious, and tasty food products. This involves a deep understanding of the biochemical and physiological processes that take place in the human body, as well as an understanding of the chemical and physical processes that occur during food processing and preparation [1].

One of the most important ways in which food science technology affects human health is through its impact on food safety. Food safety is a major concern for consumers, as foodborne illnesses can cause serious illness and even death. Food science technology plays a crucial role in ensuring that food is safe to eat by developing new methods of food preservation, such as pasteurization, sterilization, and irradiation, which help to kill harmful bacteria and other pathogens [2].

Another way in which food science technology affects human health is through its impact on the nutritional content of food. Food scientists work to optimize the nutrient content of food by developing new processing techniques and formulations

that can increase the availability and bioavailability of essential nutrients such as vitamins, minerals, and proteins. This is particularly important for vulnerable populations such as infants, children, and pregnant women, who have higher nutrient requirements than the general population.

In addition to improving food safety and nutritional quality, food science technology also has a significant impact on the sensory properties of food, such as its taste, texture, and appearance. This can have important implications for public health, as the sensory properties of food can affect people's food choices and eating behaviors. By developing healthier, more appealing food products, food scientists can help to encourage healthy eating habits and reduce the prevalence of diet-related chronic diseases such as obesity, diabetes, and cardiovascular disease [3].

Finally, food science technology also plays an important role in addressing global health challenges such as malnutrition and food insecurity. By developing new food products that are affordable, nutritious, and culturally appropriate, food scientists can help to ensure that all people have access to safe and healthy food.

The relationship between health and food science technology is a multifaceted one that encompasses many different aspects of food production and consumption. By understanding the complex interplay between food science and human health, we can work to develop new and innovative food products that promote health and wellbeing for all.

Furthermore, food science technology also contributes to reducing food waste, which is a significant problem globally.

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Food waste not only results in the loss of valuable resources but also contributes to environmental issues such as greenhouse gas emissions. By developing new food preservation and packaging techniques, food scientists can extend the shelf life of food products, reducing the amount of food that goes to waste [4].

The impact of food science technology on human health extends beyond just the development of new food products. Food science research also provides valuable insights into the relationship between diet and disease. By studying the effects of different nutrients on human health, food scientists can help to inform public health policies and guidelines, promoting healthier eating habits and reducing the prevalence of chronic diseases.

Food science technology also has an important role to play in addressing global challenges such as climate change and food insecurity. By developing new agricultural practices that are sustainable and resilient to climate change, food scientists can help to ensure that food production remains stable in the face of environmental challenges. In addition, by developing new plant-based protein sources and alternative meat products, food scientists can help to reduce the environmental impact of animal agriculture and promote more sustainable food systems [5].

Conclusion

The relationship between health and food science technology is a critical one that has significant implications for human

health and wellbeing. By understanding the complex interplay between food science and human health, we can work to develop new and innovative food products that promote health, reduce food waste, and contribute to sustainable food systems. Through continued research and collaboration, we can ensure that food science technology continues to have a positive impact on human health and the environment.

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