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Food Fortification as a Strategy for Combating Nutritional Deficiencies

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Abstract

Food fortification is a public health strategy that involves the addition of essential nutrients to commonly consumed foods to prevent nutritional deficiencies. It is widely used to address micronutrient malnutrition in vulnerable populations. Fortified foods contribute to improved health outcomes and reduced disease burden. This article discusses the role of food fortification in promoting nutrition security and public health. This article discusses the role of food biotechnology in modern food science and its contribution to sustainable food production. Improper post-harvest practices can lead to significant food losses, reduced nutritional value, and economic challenges. The application of appropriate post-harvest technologies enhances food safety, extends shelf life, and ensures year-round availability of food products. This article discusses the role of post-harvest technology in improving food quality and reducing post-harvest losses.

***Keywords:** Food fortification, Micronutrient deficiency, Public health nutrition, Nutritional security, Fortified foods*

Introduction

Food fortification involves the intentional addition of vitamins and minerals to food products to improve their nutritional value. This strategy is used to address widespread deficiencies of nutrients such as iron, iodine, vitamin A, and folic acid in populations at risk [1]. Fortification programs are recognized as cost-effective interventions for improving public health. Micronutrient deficiencies contribute to impaired growth, weakened immunity, and increased disease susceptibility [2]. These compounds modulate inflammation, oxidative stress, and immune responses, contributing to overall health maintenance [3]. Their presence in natural foods highlights the importance of dietary diversity and plant-based nutrition.In food science, bioactive compounds are increasingly used in the development of functional and fortified foods [4]. Advances in extraction, stabilization, and delivery technologies have improved their bioavailability and effectiveness [5]. Therefore, bioactive compounds represent a vital intersection between nutrition, food science, and preventive healthcare. Bioactive compounds are non-nutrient components in foods that influence physiological processes and promote health. These substances include polyphenols, flavonoids, carotenoids, peptides, and phytosterols, which exert protective effects against

various diseases. Their biological activity makes them valuable components of functional foods. Therefore, bioactive compounds represent a vital intersection between nutrition, food science, and preventive healthcare.

Conclusion

Food fortification is a powerful tool for combating nutritional deficiencies and improving public health outcomes. By enhancing the nutrient content of everyday foods, it supports nutrition security and disease prevention. Continued investment in fortification programs and scientific research will strengthen their impact on global health. Their development supports preventive healthcare approaches and improved quality of life. Continued scientific research and regulatory oversight will strengthen the credibility and impact of nutraceuticals in global health systems. When used responsibly and regulated effectively, they contribute to product stability and consumer satisfaction. Ongoing research and regulatory oversight are essential to ensure the safe and beneficial use of food additives in the global food industry.

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