OPEN ACCESS Freely available online

ISSN: 2157-7110
Journal of
Food Processing &
Technology

Perspective

Functional Fermentation: Yeasts at the Lead of Biotechnological Innovation in Food

Ze Yung*

Department of Fermentation Technology, National Cheng Kung University, Tainan City, China

DESCRIPTION

The functional food industry has witnessed a surge in popularity as consumers become increasingly health-conscious and seek products that offer not only nutritional value but also potential health benefits. Yeasts, traditionally known for their role in baking and brewing, have emerged as key players in the biotechnological landscape of functional foods. This article explores the diverse biotechnological potential of yeasts in the functional food industry, clarify focus on their applications, benefits, and the potential future they hold. Yeasts, particularly strains of *Saccharomyces* and non-Saccharomyces yeasts, exhibit probiotic properties. These yeasts, when incorporated into functional foods, contribute to gut health by promoting a balanced microbial ecosystem in the digestive tract. Research suggests that certain yeasts can enhance the immune system, improve digestion, and even alleviate symptoms of gastrointestinal disorders. Yeasts are rich sources of essential nutrients such as vitamins, minerals, and amino acids. The biotechnological manipulation of yeasts allows for the enhancement of specific nutritional profiles, making them valuable additions to functional foods. For example, yeasts can be engineered to produce higher levels of B-vitamins, including folate and B12, addressing common nutritional deficiencies in the population. The fermentation process, a natural metabolic activity of yeasts, not only imparts unique flavors to food products but also contributes to their functionality. Yeast fermentation can enhance the bioavailability of certain nutrients, break down anti-nutritional factors, and produce bioactive compounds with potential health benefits. This makes yeast-fermented products a palatable and nutritious choice for consumers.

Yeasts are instrumental in developing alternative sweeteners and reducing sugar content in functional foods. Certain yeast strains can produce natural sweeteners like xylitol and mannitol, offering a healthier option for individuals looking to manage their sugar intake. Additionally, yeast-derived proteins can be harnessed to enhance the sweetness of products without the need for excessive sugar, catering to the growing demand for reduced-sugar options. The antimicrobial properties of some yeasts make them ideal candidates for bio preservation in functional foods. Yeast-derived compounds can inhibit the growth of spoilage microorganisms and pathogens, extending the shelf life of products without the need for artificial preservatives. This aligns with the consumer preference for clean-label and minimally processed foods. Despite the immense potential of yeasts in the functional food industry, certain challenges need to be addressed. Strain selection, optimization of fermentation conditions, and regulatory considerations are critical factors. Additionally, ongoing research is exploring the use of advanced biotechnological tools, such as gene editing, to adjust yeast strains for specific functional attributes. The biotechnological potential of yeasts in the functional food industry is vast and multifaceted. From serving as probiotics to contributing to nutrient enrichment, flavor development, sugar reduction, and bio preservation, yeasts are shaping the landscape of functional foods. As technology continues to advance and our understanding of microbial interactions deepens, yeasts are poised to play an even more significant role in the development of innovative and health-promoting functional food products. As consumers increasingly seek holistic approaches to wellness through their dietary choices, yeasts stand as valuable allies in the pursuit of a healthier, more functional future.

Correspondence to: Ze Yung, Department of Fermentation Technology, National Cheng Kung University, Taiwan, China, E-mail: yung56@gmail.edu.cn

Received: 27-Nov-2023, Manuscript No. JFPT-23-24447; **Editor assigned:** 30-Nov-2023, PreQC No. JFPT-23-24447 (PQ); **Reviewed:** 14-Dec-2023, QC No. JFPT-23-24447; **Revised:** 21-Dec-2023, Manuscript No. JFPT-23-24447 (R); **Published:** 28-Dec-2023, DOI: 10.35248/2157-7110.23.14.1077

Citation: Yung Z (2023) Functional Fermentation: Yeasts at the Lead of Biotechnological Innovation in Food. J Food Process Technol. 14:1077.