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Perspective

Identifying the Utilization of Enzyme Processing in Food Biotechnology

Meijer Van*

Department of Food Processing, University of Cambridge, Cambridge, United Kingdom

DESCRIPTION

The food sector is continually looking for cutting-edge technology to satisfy customer demand, and industrial product manufacturers have long employed enzymes as important tools to turn raw materials into finished goods. Its widespread usage in food technology is due to their clean label (widely regarded as safe) legal factor. Many enzymes have the ability to enhance the flavour, texture, digestibility, and nutritional value of food preparations when purified and added. The rapid advancement in protein technology, however, did not start until the middle of the 20th century, and only in the past 30 years has the use of commercial enzymes increased in the food industry, playing an increasingly significant role in the production of meat, vegetables, fruit, baked goods, milk products, as well as alcoholic and non-alcoholic beverages. In fact, more studies about improved product yields have been published during the past 10 years in both the food and beverage manufacturing industries. In addition, several previously undiscovered enzymes are now being used to make a variety of meals in which the biocatalysts replace potentially dangerous chemicals since it is desired in various sectors of food technology to alter the physical and chemical characteristics of protein. Also, there are novel techniques that change the properties of natural items to meet evolving nutritional or technical needs.

The use of specialised enzyme preparations has several financial advantages, including decreased process costs, less environmental impact due to the utilisation of renewable resources, and frequently higher product quality. Also, preservation has a big influence on the caliber of both food and drinks. For instance, it is generally known that contemporary methods turn juices into concentrates that, aside from scent, may be preserved for an extended period of time without losing quality. Another example of enhanced preservation is stabilizing taste and colour. Lastly, the development of biotechnology has made it possible to significantly improve methodology, providing unexpected solutions to many enduring issues and creating exciting new opportunities. As they may be employed to cure biological wastes or stop their development, enzymes are one of them and are suggested as exemplary "green" technology agents. While some enzymes utilised today come from plants and animals, most come from a variety of advantageous microbes. As a result, several refined enzymes are now often utilised as food additives as well as in food processing. It is interesting in this regard because the enzymes, like other proteins, only elicit responses in individuals who have been sensitized as a result of prolonged exposure. Finally, the development of biotechnology has made it possible to significantly improve methodology, providing unexpected solutions to many enduring issues and creating exciting new opportunities. As they may be employed to cure biological wastes or stop their development, enzymes are one of them and are suggested as exemplary "green" technology agents. While some enzymes utilised today come from plants and animals, most come from a variety of advantageous microbes. As a result, several refined enzymes are now often utilised as food additives as well as in food processing. It is interesting in this regard because the enzymes, like other proteins, only elicit responses in individuals who have been sensitized as a result of prolonged exposure.

The enzymes are therefore extremely unlikely to induce allergies because their levels in food are often quite low. This special issue of Enzyme Research is devoted to highlighting certain developing areas of enzyme applications in food technology, primarily outlining how various biocatalysts have benefits in certain advancements and innovations in food processing. There are three research papers and six review articles in it. The first review article provides a succinct and clear summary of the uses of enzymes in food and feed processing and describes how protein engineering, microbial screening, and immobilization methods may be used to create improved biocatalysts.

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Correspondence to: Meijer Van, Department of Food Processing, University of Cambridge, Cambridge, United Kingdom, E-mail: meijervan908@gmail.com

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