MNF Books

Enzymes in Food Technology, 2nd Edn.

Rober J. Whitehurst and Maarten van Oort (Eds.)
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The call for greener industrial processes (''renewable resources'', ''white biotechnology'', and ''bio-economy'') is a major stimulus of current research on enzymes. These biocatalysts operate under mild conditions and show impressive efficiencies and selectivities. The general advantages of enzymes are particularly evident in food applications: No other treatment or additive can change a single constituent in multi-component systems as selectively as enzymes do. Thus, they are more and more appreciated as targeted tools that can be adapted (strain selection, enzyme engineering, and enzyme modification) to various tasks, be they accelerated processing, removal of undesired components, flavour formation, or others.

The 8 years since the first edition of *Enzymes in Food Technology* appeared were characterized by rapid progress and new applications to food and drink. For example, genetic manipulation of producer cells is becoming standard, and the upcoming EC list will contain numerous enzymes for food processing from recombinant sources. An update appeared overdue.

In 15 chapters, the book deals with general properties of food enzymes, GMO and protein engineering (new chapter), production of industrial enzymes, asparaginases (for acrylamide reduction; new), followed by the description of the application of enzymes in dairy products, bread making, non-bread wheat-based foods (new), brewing and alcohol production, fish (another new chapter), fruit vegetable and meat processing, protein modification, starch processing, and lipase technology.

The majority of authors are writing on the background of an industrial position, and this creates both the book's most prominent strength and weakness. The first-hand expertise of the authors shows through all of the chapters. Why, for example, may the hydrolysis of a protein solution proceed too slowly? Because the enzyme was applied diluted, and autolysis occurred which is to be prevented only by using the original concentrated formulation. On the contrary, some of the chapters do not fully live up to the publisher's claim to be ''fully updated''. Chapters with over 100 references, including very recent ones, stand side by side with others, which are heavily under-referenced. However, all the authors succeed in bridging from the biochemical principles to the quality parameters of food. The chapters are comprehensive, but easy to read, often sophisticated in writing, but well organized. Numerous tables and figures and the clear graphical presentation should be noted. Overall, the book contains just what the title promises and what most food scientists will expect.

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