

Book Reviews

Biotechnology in Food Processing. Edited by S. K. Harlander & T. P. Labuza. Noyes Publications, Park Ridge, New Jersey, 1986. ISBN 8-8155-1073-X. xxvi + 323 pp. Price: US\$48.00.

This book arises from the proceedings of a symposium, held at the University of Minnesota, on 7–9 October, 1985. It contains an impressive list of contributors, virtually all from North America. There is a Foreword by Joshua Lederberg, dedicated to the memory of Edward L. Tatum.

The chapter titles are: Biotechnology: Its potential impact on traditional food processing; Regulatory issues in the food biotechnology arena; Federal Regulation of food biotechnology; Enzymology and food processing; Protein Engineering: Potential applications in Food Processing; Biopolymers and modified polysaccharides; Use of microorganisms in the production of unique ingredients; Potential applications of plant cell culture; Application of genetic engineering techniques for dairy starter culture improvement; Production of L-ascorbic acid from whey; The genetic modification of brewer's yeast and other industrial yeast strains; *Lactobacilli* in food fermentation; food fermentation with molds; Utilization of fermented foods: An application of fermentation technology; Separation technology for bioprocesses; Scale-up of a fermentation process; The use of enzymes for waste management in the food industry; Biosensors for biological monitoring; Strategies for the commercialization of biotechnology in the food industry; Cost reductions in food processing using biotechnology; Profit opportunities for the food processing industry.

The book covers a wide range of topics and offers a combination of broad

coverage and specific topics. It gives an excellent overview of the subject. The authors skillfully pick out the important practical applications, but never seem to overstate the commercial implications. In this sense they seem to have their feet on the ground. I did notice that Chapter 10 had ten co-authors and I was intrigued to know what were their individual contributions. One indicator of the value of the book was my difficulty in recovering it from colleagues who were constantly making use of it.

The presentation is good and the book has been well edited. It is more coherent than many symposium proceedings and should be consulted by Biotechnology and Food Technology students.

Mike Lewis

Food Microbiology. Volume I: Concepts in Physiology and Metabolism; Volume II: New and Emerging Technologies. Edited by T. J. Montville. CRC Press, Boca Raton, Florida, 1987. Vol. I: ISBN 0-8493-6478-7, 161 pp. Vol. II: ISBN 0-8493-6479-5, 195 pp.

Although these two volumes are entitled 'Food Microbiology' seven out of the ten chapters deal with aspects of the general physiology and genetics of microorganisms with no particular emphasis on microbes important in foods. While microbial physiology and genetics are, of course, highly relevant to food microbiologists they are generally well covered in textbooks and review journals.

General microbiological topics covered include: Osmoregulation by microorganisms at reduced water activity, Pumps and carriers: nutrient transport in bacteria, Electron transport in anaerobes, Bacterial sporulation and germination, Basic immunology, Microbial genetics and recombinant DNA and Continuous culture: theory and applications. Some of these are comprehensive and lucid expositions suitable for the general reader but others require considerable previous knowledge for their appreciation.

The three particularly food-orientated chapters are on Genetic regulation of toxin production by foodborne microbes, Potentials and impediments in automated food microbiology, and Rapid automated methods. The first of these is rather diffuse because, in most cases, the genetics of toxin production are not well understood. The second is a thoughtful essay on the strategies and possibilities for rapid methods while the last is an excellent survey of currently available methods of speeding up and automating the assessment of the microbiological qualities of foods, together with a consideration of the advantages and disadvantages of each method. Techniques covered include