

Book Reviews

Dairy Starter Cultures. Eds T. M. Cogan & J.-P. Accolas. VCH Publishers Inc., New York. ISBN 1 56081 628 7. xii + 277 pp.

In spite of the numerous advances in our understanding of milk chemistry, biochemistry and enzymology, the use of this knowledge to synthesise a top-quality cheese or fermented milk in the laboratory remains a vision for the future. Consequently, the dairy industry remains reliant on the activity of microbial cultures to manufacture a range of products from hard-pressed or mould-ripened cheeses through to drinking yoghurts. In most cases, growth of the culture during manufacture is critical for success but, while maturation of a cheese may rely on residual enzymes and/or conditions created by the culture, the emergence of the so-called 'health-promoting' milks means that the selected cultures must be present throughout the shelf-life of the product. In addition, a manufacturer expects consistent performance from a culture, and hence it is not surprising that the microbiology of starter cultures — both fungal and bacterial — has been the subject of many laboratory studies and scientific papers.

Much of this literature, particularly as it relates to bacterial starter cultures, has been reviewed in this present book, which consists of 10 chapters each written by an authority(ies) of international standing. The coverage ranges from genetics and basic metabolism through to the types of cheese starter employed in the industry, i.e. single strain and multiple strain starters, as well as consideration of the physical forms of culture available to a creamery. Problems of chemical as well as bacteriophage inhibition are discussed and, in fact, it would be hard to fault the detail available about cheese starters, in general, and the lactococci in particular. The nature and behaviour of starters for the standard fermented milks is dealt with at appropriate points in the text but, even though the bifidobacteria and lactobacilli of intestinal origin can be difficult cultures to handle, the treatment of these probiotic cultures is somewhat biased towards their *in vivo* rather than *in vitro* performance.

Nevertheless, the overall impact of this book is entirely positive, and there can be little doubt that many students and/or researchers will be extremely grateful to the editors and authors of this book for producing so thorough a review of the subject.

Richard K. Robinson

Food Phenolics: Sources, Chemistry, Effects, Applications. F. Shahidi & M. Naczk. Technomic Publishing Co. Inc, Lancaster, PA, USA, and Basel, 1995. ix + 331 pp. Price: \$125.00.

As the authors state, interest in food phenolics has reached a new high in recent years, accentuated by reports on the beneficial effects on health, including antimutagenicity, anticarcinogenicity, and antioxidant activity. Such a book is therefore welcome. It comprises nine chapters, arranged in four sections, a brief introduction, occurrence and chemistry (cereals and legumes, oilseeds, fruits and vegetables, beverages), characteristics, effects, and properties (nutritional and pharmacological, sensory, antioxidant), and methods of analysis and quantification, as well as a subject index. There are over 100 tables of data and almost 100 figures. Except for the introduction, each chapter is followed by a substantial list of references.

Thus the book is timely and expectations are high, but they are fulfilled only in part. There are far too many errors and omissions. Thus already on p. 1, the contribution of anthocyanins to colour in plants is greatly exaggerated by ignoring carotenoids. Formulae are too frequently incorrect (e.g. pp. 21, 96, 113, 139, 148, 150, 203, 248, 249 and 273). Profisetinidin is not identical with procyanidin (p. 33). The oestrogenic activity of isoflavones is not brought out. Botanical binomials frequently appear without authors. Figure 9.8(c) is missing. Chemical nomenclature is not a strong point either (see, for example, pp. 9, 134, 204, 239, 245, 247–249, 270, 288, 306 and 310).

The various aspects of food phenolics are not always kept in proportion. Thus, the chapter on phenolic compounds in fruits and vegetables starts by pointing out two recent books (Macheix *et al.*, *Fruits Phenolics*, CRC Press, Boca Raton, FL, USA, 1989, and Mazza and Miniati, *Anthocyanins in Fruits, Vegetables and Grains*, CRC Press, Boca Raton, FA, 1994) and, as a consequence, is much less detailed than expected, providing only 'some general discussion'. Again, paper chromatography, on which so many of the early achievements of the study of polyphenols was based, is not mentioned until almost the last page of the book.

Nevertheless, the volume contains a wealth of information, which, as long as it is viewed critically (students beware!), can be extremely valuable. Overall, it is well produced, though the English is not always