A. Steinbüchel (Münster, Germany) and S. K. Rhee (Seoul, S.-Korea) (Editors): Polysaccharides and Polyamides in the Food Industry. Properties, Production, and Patents

Vol. 1 Polysaccharides, Vol. 2 Polyamides


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Following their present policy WILEY-VCH continue publication of selected topics from their important, encyclopedic ten volume reference work “Biopolymers”. Reference is made to the widespread occurrence of biopolymers in food and their processing in the food industry. For this purpose the editors have selected relevant sections from Volumes 5–8 of the “Biopolymers” series that constitute 19 chapters in this new two-volume spin-off product: 13 chapters on Polysaccharides in Vol. 1 and 6 chapters on Polyamides in Vol. 2. The single chapters are each compiled in monographic fashion by 31 (Vol. 1) and 20 (Vol. 2) authors, in a rather free, individual style.


Vol. 2 (Polyamides, 250 pages) encompasses: “Collagens and Gelatins”, “Enzymes for Technical Application”, “Poly-γ-glutamic Acid”, “ω-Poly-l-lysine”, “Sweet-tasting Proteins”, “Vicilin and Legumin Seed Storage Proteins”. The variation in the personal style of the authors gives rise to a broad diversity between the different chapters. The individual view of the authors as well as the specificities of the substrates under study become visible. In summary, the reader finds a comprehensive review concerning occurrence, molecular and physical structure, biosynthesis, production, biodegradation, properties and functionalities, forms of application up to 2000 (only partly until 2002) accompanied in part by carefully selected references of patents and literature.

Chapter 12, “Starch” (57 pages) is written by R. F. Tester and J. Karkalas, Glasgow Caledonian University, two highly recognised specialists in modern starch research and development. Their contribution may be valued as a concentrated, highly informative representation of the present state of knowledge in the field of starch. Main aspects are: “Sources”, “Morphology and Composition”, “Biosynthesis”, “Granule Structures”, “Physical Properties”, “Modification”, “Analysis”, “Industrial Production” and “Hydrolysis Products”, followed by 11 pages of references. The propagated use of the authors’ own results on structure and functionality plays a decisive role in defining starch behaviour in the different fields of industrial processing and applications. Regarding these mechanisms as the basis of all present starch applications, the authors treat the wealth of knowledge about products and their processing and properties in the fields of food and non-food applications, including hydrolysis and hydrolysis products, rather shortly on a few pages. Further evidence for starch utilization in food (and technical uses) is available from Chapter 15 (Enzymes for Technical Application, 61 p.), compiled by a team of specialists from NOVOZYMES, A/S, Denmark and North America. The chapter comprises structure and production of enzymes intended for: “Detergent Industry”, “Starch Industry”, “Biofuel”, “Textile Industry”, “Pulp and Paper”, “Organic Syntheses”, “Processing of Fats and Oils” and “Key Technologies for the Discovery of Industrial Enzymes”. Together with ten pages of references this chapter is well written and highly informative.

Though being focused on applications in the food industry the use of biopolymers in non-food applications is touched in most chapters. So, a general survey on mechanisms of structure, properties and functions for important polymers becomes available to the readers. Last, but not least the excellent design of the entire book has to be pointed out.

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