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Book Review

Seafood Enzymes: Utilization and Influence on Postharvest Seafood Quality

N.F. Haard, B.K. Simpson (Eds.); Marcel Dekker, Inc., New York, 2000, xvii + 681 pages, ISBN 0-8247-0326-X, US$ 225.00

Seafoods, after harvesting, are generally more perishable than other foods as most undergo 'autolysis' or endogenous biochemical reactions. The increased understanding of seafood enzymes may help develop future methods on the better preservation of seafood quality. Seafood enzymes are also very important as industrial processing aids. Although some of the enzymes found in aquatic creatures are homologous to those found in animals, enzymes from different sources may exhibit vastly different properties with respect to stability, temperature optimum, secondary substrate specificity, as well as some other factors.

This book covers a myriad of topics on how enzymes are important in improving the uses of seafood raw materials. It is a reference book, and topics include the nature of such enzymes and the biological factors affecting them. The role of native enzymes in post-mortem effects on quality attributes such as texture, flavour and colour are discussed, as are the uses of the products of enzyme breakdown as quality indices. The control of enzyme activities by modification of the environmental conditions, processing or use of inhibitors is covered, as are the uses of enzymes isolated from fish processing by-products, as processing aids.

Seafood Enzymes: Utilization and Influence on Postharvest Seafood Quality is divided into five parts, starting with an introduction on how the properties of enzymes from sea-animals are related to inter and intra specific factors. Then specific enzymes or enzymes groups that are known to be important to seafood technologists and have been studied are reviewed. The third and fourth parts of the book describe the relationship between enzymes and seafood quality, and the control of enzyme activities in seafood products. Finally, the application of enzymes as seafood processing aids and the recovery of useful enzymes as by products from seafood wastes are covered.

This book discusses the special roles of seafood enzymes in post-mortem fish metabolism, as the quality changes they effect are critical pieces of knowledge in achieving the goal of obtaining maximum value from the available resources. This text has over 150 detailed illustrations and contains over 2570 references. It contains contributions from 33 international experts, and gives a comprehensive and timely coverage of the subject.

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Carbohydrate Chemistry

G.-J. Boons (Ed.); Blackie Academic & Professional, London, 1999, xiv + 508 pages, ISBN 0-751-40396-2, £89.00

Carbohydrates are the most abundant group natural products. Comprising of mono-, oligo-, polysaccharides and their derivatives, carbohydrates have uses both dietary and structural in plants and animals, as well as playing key roles in living systems. The understanding of some of the biological roles played by carbohydrates and glycoconjugates has resulted in increasing their importance. This new understanding of carbohydrates has put their study in the forefront of modern chemical research. An expanded awareness of the roles of carbohydrates in the biological and pharmaceutical sciences has also increased the interest in carbohydrate chemistry.

Carbohydrate Chemistry focuses on the chemistry of oligosaccharides, glycoconjugates and neoglycoconjugates. It starts with an introductory chapter on the physical properties of mono- and oligosaccharides, which is crucial for understanding the chemical reactivities of these compounds. Initial chapters cover the preparation of precursors for the synthesis of complex saccharides and the use of modern protecting group strategies and functionalization of saccharides. The main part of this book covers oligosaccharide and glycoconjugate chemistry and the preparation of natural and unnatural compounds. The concluding chapters contain less preparative information, which is nonetheless essential to carbohydrate chemists. It also includes a short review highlighting possible uses of naturally occurring saccharides as leads for new therapeutic developments. This book ends with a chapter describing physical methods used in carbohydrate research. The application of enzymes in saccharide chemistry is covered throughout the book.