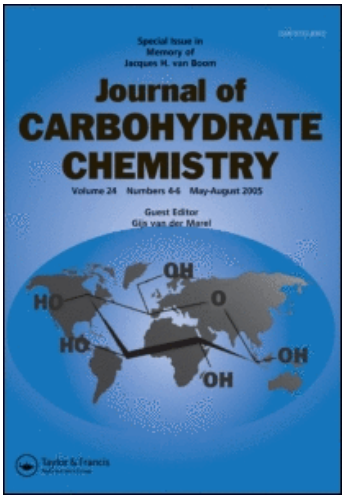

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A review of: "Progress in Biotechnology, Volume 1. Mew Approaches to Research on Cereal Carbohydrates. Edited by Robert D. Hill and Lars Munck. Elsevier, Amsterdam and New York. 1985. xii 416 pages. ISBN O-444-42434-2. $102.00"

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BOOK REVIEW

Progress in Biotechnology, Volume 1. New Approaches to Research on Cereal Carbohydrates. Edited by Robert D. Hill and Lars Munck. Elsevier, Amsterdam and New York. 1985. xii + 416 pages. ISBN 0-444-42434-2. $102.00.[1]

This book is a collection of 47 papers presented at an international conference on cereal carbohydrates held at the Carlsberg Research Center, Copenhagen, in June of 1984. This was the third conference on cereal carbohydrates held in conjunction with International Carbohydrate Symposia.

Most of the papers are brief reviews with an up-dating of current ideas on a subject. A few papers include original data or new analytical methods. The papers, which vary in length from six to twenty pages, were edited well. The book contains no index.

Approximately one-half of the book is devoted to starch, including biosynthesis, genetic control of synthesis, fine structure, minor components, solution behavior, starch-degrading enzymes, and new uses. This information is diverse and stimulating; it ranges from modern biology in the hormonal and genetic regulation of hydrolytic enzymes in germinating cereals, to technology where starch is used to produce water-soluble films or to enhance the biodegradation of polyolefin films.

One-fourth of the book concerns the non-starch polysaccharides in cereal grain and straw. These papers include

information on cellulose biosynthesis; the cellulase complex; straw composition and its treatment for use in animal feeds and paper; structure and biosynthesis of arabinoglucuronoxylans in endosperm cell walls; the binding of 4,4'-diaminodiphenyl and 4,4'-diamino-stilbene dyes with polysaccharides, especially β-glucans; the effect of (1→3)(1→4)-β-D-glucan on malting in barley; use of lectins as a cytochemical probe for glycoconjugates in cereal grains, and industrial uses of the entire cereal plant. The final quarter of the book contains selected historical developments in cereal chemistry, isolation and nutritional significance of aleurone cells, cereal carbohydrates in human nutrition and as functional ingredients in foods, determination of polysaccharides in cereal products, and cereal grains and straw in broiler and ruminant feeds.

I recommend this book be read by research workers and graduate students working in the fields of biotechnology, cereal chemistry, and carbohydrates. The current information in the book will improve one's understanding of the traditional uses of cereal carbohydrates in food and feed. In addition, it will challenge us to view the whole cereal plant as a source of industrial raw materials, as is done in Denmark (paper by F. Rexen).

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[1] Available in the United States and Canada from Elsevier Science Publishers Co., Inc., P.O. Box 1663, Grand Central Station, New York, New York 10163.