Carbohydrate Research, 168 (1987) c13
Elsevier Science Publishers B.V., Amsterdam – Printed in The Netherlands

Book review

Starch: Properties and Potential: edited by T. GALLIARD, Wiley, Chichester, 1987, viii + 148 pages + Subject Index, £ 31.00.

This slim book consists of a brief review of starch-granule structure, starch morphology and trace constituents, and physical modification of starch, and contains a general section on enzyme hydrolysis and fermentation.

A number of small errors occur. Polymeric starch derivatives *are* used as foods, in limited degrees of substitution by approved substituent groups. Zero Nikuni was the first to suggest that the amylopectin structure is like tassels-on-a-string, as Dexter French was pleased to recognize. Proper carbohydrate nomenclature is not always followed. Thus, the anomeric designators α and β are meaningless unless immediately followed by the sugar-series descriptor D or L. Starch contains no "anhydroglucose" units; these should be termed D-glucosyl or, better, D-glucopyranosyl units. Table 2.1 has a Degree of Polymerization column which is a little difficult to understand on the first reading. Printing errors are nearly absent, but the reviewer could not help but note that his middle initial was incorrect in the very first reference!

In general, readers will find the volume interesting and informative. Chapter 1, by T. Gailliard, describes (in 15 pages) starch sources and commercially important aspects. In Chapter 2, J. M. V. Blanshard suitably reviews granule structure and function, mainly as indicated by physical means, and states quite properly, if unhappily, that one is still left with the question of "what is the real structure within the granule?". In Chapter 3, T. Gailliard and P. Bowler treat the morphology and composition of starch. In Chapter 4, P. Colonna, A. Buleon, and C. Mercier discuss physical modification of starch, particularly by thermal and radiation effects. Heat–moisture, interaction with lipids, and effects of extrusion are dealt with at some length. In Chapter 5, J. F. Kennedy, J. M. S. Cabral, I. Sá-Correia, and C. A. White deal briefly with the granule structure and its degradation by enzymes, and then give some attention to starch fermentation to afford ethanol and other chemicals.

These are specialized reviews that make the volume a nice companion volume for a library on starch chemistry.

Whistler Center for Carbohydrate Research
Purdue University
West Lafayette, IN 47907

ROY L. WHISTLER