



Book reviews

The Chemistry and Technology of Pectin. Edited by Reginald H. Walter, Academic Press Ltd., London. 1991. xi + 278 pp. Price £63.00. ISBN 0-12733870-5.

Pectic substances are a complex group of structural polysaccharides that are one of the primary constituents in the cell walls of many plants. They are known to be involved in intercellular adhesion and, through their ability to form stabilising gels, to strengthen the cell wall. This class of polysaccharides is of significant importance in food technology, both from the point of view of ripening and processing of fruit and vegetables, and also in the fabrication of food or non-food applications to modify physical characteristics.

In this book, *The Chemistry and Technology of Pectin*, authors from both industry and academia have reviewed various aspects of the chemistry and uses of this class of polysaccharides. In chapter one, the classes and structure of the pectic substances and their function in plant tissue structure and firmness are briefly discussed, with an exceptional list of references for those who wish to obtain more detailed knowledge than is the scope of such an introductory chapter.

The subsequent chapters of the book review physico-chemical properties of high-methoxyl and low-methoxyl pectins, and modification of physical properties by oxidative coupling. The classes of pectolytic enzymes, pectinesterase, polygalacturonase and lyases, their occurrence, substrate, mode of action and application in the food industry are discussed, and analytical and graphical methods for pectin characterisation and the rheology of pectin dispersions and gels detailed. The advances which have been made in the characterisation and understanding of the functionality, particularly the ability to form gels, of the pectic materials has enabled these biopolymers to be utilised in a number of food and non-food applications. Its use in jams, jellies and preserves and in fabricated foods are well established, but applications in the fields of medicine, dentistry, skin-care products, animal feed, etc. are all under investigation and mentioned within this text.

This monograph, with its breadth of coverage and detailed reference listings, has achieved the editor's objective of being the long awaited sequel to the book written by Kertesz in 1951. Information is presented in a readable fashion, with only essential mathematics included, so making this book one which will appeal and be of assistance to the wide range of scientists

involved in all aspects of the utilisation or characterisation of pectic substances — manufacturers and researchers.

Linda L. Lloyd
John F. Kennedy

Environmental Solutions in the Pulp and Paper Industry. Edited by Kelly Ferguson, Miller Freeman Inc., San Francisco, 1991. viii + 196 pp. Price \$48.00. ISBN 0-87930-245-3.

Owing to the folly of man's industrial development, there is an urgent need to reduce water, air, and solid waste emissions. This is causing a number of major changes in legislation forcing industries to adapt their technology to conform with 'environmentally friendlier' policies. Such changes have had a major effect on the pulp and paper industry. Problems such as limited landfill space and air toxins have altered the way in which mills view their emission products, and have also spurred changes in pulp and paper technology. For example, new bleaching techniques and extended cooking methods have come about, partly due to environmental concerns from legislators and the public, and one of the main driving forces behind improved paper-making technology is recycling.

This book gives proper consideration of environmental issues in four major subjects. The first section considers environmental permitting and planning. Effluent improvement is one of the most modernised areas of pulp and paper mill technology, with this book focusing on pulp mill and bleach plant improvements, such as bleaching alternatives, H₂O₂-enhanced bleaching, and anaerobic treatment. The air emission control section examines the technologies for the reduction of traditional air pollution, along with the scrubbing of bleach plant gases and emission management programs. The solid waste handling section discusses new disposal methods, new incineration technology, and sludge drying.

This book thoroughly encompasses the whole field of environmental issues with respect to the pulp and paper industry, from legislation, to new technology, to management, with a concise but detailed index. It is an ideal reference manual for someone with the industry or as part of a scientific or university library.

John F. Kennedy
Charles J. Knill