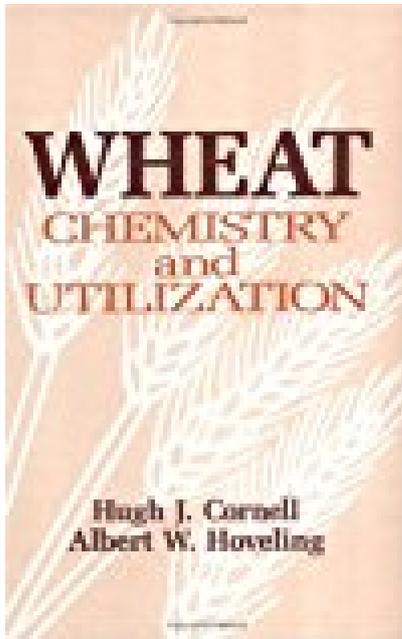


# Wheat Chemistry and Utilization

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## BOOK DETAILS

- Author : Hugh Cornell
- Pages : 426 Pages
- Publisher : CRC Press
- Language : English
- ISBN : 1566763487

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## BOOK SYNOPSIS

This new book meets the need for a comprehensive, up-to-date review of wheat chemistry, processing and uses. It provides the reader with extensive new information on wheat components that will be useful in better commercial utilization of wheat and the formulation of new and upgraded wheat-based food products. The book serves as a one-volume information resource for all those involved in the research, development, formulation, and evaluation of wheat-based food products. From the Authors Preface Wheat continues to be one of the worlds most important grains, especially as a food, where the unique properties of its products can be utilized to advantage. It provides an excellent example of a natural product from which a wide range of useful by-products can be made. This book discusses the components of the wheat kernel, which provide interesting examples of study of carbohydrate and protein chemistry, as well as lipids, minerals and vitamins. This book should serve as a useful reference for the cereal chemist, as well as chemists and food technologists in those industries in which by-products of flour are used, e.g., the confectionery industry in which modified starches and starch syrups are used. In addition, nutritionists, dieticians, and many kinds of researchers will find chapters of interest. Particular attention is given to particle-size determinations, an important area in food processing, and to the role of wheat proteins in gluten intolerance and wheat allergy. . . . Both the milling of wheat and flour quality are discussed in order to give the reader an idea of the distribution of the major components and the importance of proper size reduction. The book also has a chapter on wet milling of wheat flour . . . and chapters on the properties and uses of wheat starch, starch syrups, and chemically modified wheat starch. Contents Each chapter ends with a section of references. 1. The Wheat Kernel - Introduction - The Structure of the Wheat Kernel - Wheat Production - Wheat Quality - Wheat Utilization - Dietary Considerations and Food Value of Wheat - The Lipids of Wheat - The Enzymes of Wheat - The Pigments of Wheat - Comparison of Wheat with Other Cereals - Animal Feeds 2. The Milling of Wheat - Introduction - Cleaning and Conditioning - Milling Techniques - Yields of Wheat Flour and By-products - Composition of Wheat Flour and Its By-products - Flour Quality - Air Classification of Flour - Utilization of Flour and Its By-products in the Baking Industry 3. The Wet-milling of Wheat Flour - Introduction - Types of Processes - Refining of Starch by Centrifugal Methods - Particle Size Analysis of Starch - Minor Constituents - Further Purification of Commercial Wheat Starch 4. The Composition, Properties and Uses of Wheat Starch - Introduction - Composition of Wheat Starch - Properties and Reactivity of Starch - Gelatinization of Starch in Hot Water - Retrogradation of Starch Gels - Rheology of Starch Gels - Pregelatinized Starch - Industrial Starch Quality - Industrial Uses of Wheat Starch 5. Starch Syrups - Introduction - Syrups from Acidic Hydrolysis - Purification of Syrups - Syrup Additives - Syrups from Enzymic Hydrolysis - Uses of Starch Syrups - Analysis and Tests on Starch Syrups 6. Chemically Modified Wheat Starches and Their Uses - Introduction - Starches in the Paper-making Industry - Thin-boiling Starches - Starch-based Adhesives - Starch Ethers - Starch Esters - Oxidized Starches - Starch Xanthates - Cationic Starches - Modification of Starch by the Use of Additives 7. Amino Acids, Peptides and Proteins - Introduction - Amino Acids - Simple Peptides - Polypeptides/Proteins - Protein Synthesis - Reactions of Proteins - Reactions Used for Determination of Protein Structure - Isolation of Proteins - Determination of Protein Content - Determination of Protein Structure 8. Wheat Proteins - Introduction - Endosperm Proteins - Separation of Proteins - Functional Properties of Proteins and the Wheat-Gluten Complex - Uses of Dry Vital Gluten - Bioactive Components of Wheat - The Maillard Reaction - Microbiological Control of Processing - The Future for Wheat 9. Wheat on the World Wide Web (WWW) - Introduction - The Basic Requirements for the WWW - Searching for Journal and Bibliographic References; Uncover Data Base - The HTTP Protocol and Home Pages - Search Engines on the WWW - The Altavista Search: Results - The Future of Information on the WWW Index 69 Figures, 17 Tables -

----- The Authors Dr. Cornell received his M.Sc. from the University of Melbourne and his Ph.D. from the Royal Childrens Hospital, Melbourne. His faculty positions have included those of Senior Lecturer and Associate Professor in the Department of Applied Chemistry at the Royal Melbourne Institute of Technology, and Visiting Professor at the University of Zurich, Karolinska Institute (Sweden) and the Technical University, Munich. More than forty of his papers have been published in journals, and he has made more than forty invited conference presentations. Dr. Hoveling received his Ph.D. from Flinders University of South Australia. He has been on the faculty of the Royal Melbourne Institute of Technology, in the Department of Applied Chemistry, for more than twenty-five years, first as a Lecturer and now as Senior Lecturer. Two areas of his specialization are analytical techniques and chemical information systems. ----- ISBN: 1 -56676 -348 -7 Year: 1998  
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