Cereal Grains: Properties, Processing and Nutritional Attributes

Cereal Grains: Properties, Processing and Nutritional Attributes is an excellent book that provides an in-depth review of morphology, physical-chemical properties, production, storage, industrial processing, and nutritional value of cereal grains. Similar competing titles are available in the market; however, the specific attraction of this volume—Food Preservation Technology Series—is its comprehensive and outstanding collection of the current information about the physicochemical and nutritional properties for the major cereal grains—wheat, rice, maize, oats, barley, sorghum/millets—and their products. Additionally, what was lacking in academia was the availability of a new and standard textbook for readers interested in this area and the author and editor have done a good job of bringing that together as a common and unique package. The book deserves credit to be the first of its kind in the market.

This single-authored textbook comprises 18 chapters that take the reader through an exciting journey of postharvest management and the wide array of industrial processes used to manufacture foods in a stepwise, reader-friendly style. The structure of each chapter is compact and its sequential arrangements are an added additional benefit to the readers. Most of the chapters are well laid out and clearly subdivided into sections on the chapter 2) and chemical composition (Chapter 3), grain development, morphology (Chapter 4), storage of grains (Chapter 5), and storage pests (Chapter 6). The next chapters regarding the importance of manufacturing processes using dry-milling operations (Chapter 7), wet-milling operations (Chapter 8), lime-cooked products (Chapter 9), bakery products (Chapter 10), breakfast cereals (Chapter 11), and cereal-based snacks (Chapter 12) highlight specific production, such as modified starches (Chapter 13), and alcohol-based products (Chapter 14). Several chapters included in this volume of cereals and their products (Chapter 15), traditional foods (Chapter 16). The last two chapters (Chapters 17 and 18) provide the core of the information on these new science frontiers: the role of cereals in human nutrition and health and feedstuffs for animals.

Several illustrations, flow charts, and diagrams make the chapters easy to understand and help the reader grasp the basic concepts with less effort. One of the criticisms of the volume is that some illustrations and figures have poor quality. Clear diagrams and models are absolutely essential for understanding basic concepts of cereal processing and improving the relevant figures would make the volume more appealing to inexperienced undergraduate students. In addition, a bit more emphasis would have been appreciated for more advanced readers.

Overall, the current text book is an excellent resource on general and particular aspects of cereal grain properties.