

support research and development, but will also be suitable for academic purposes.

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Available online 14 July 2005

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doi:10.1016/j.carbpol.2005.05.006

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**E. Abdel-Aal and P. Wood, editors. Specialty Grains for Food and Feed, American Association of Cereal Chemists, Inc., Minnesota, USA, 2005 (413 pp., \$109.00, ISBN 1-891127-41-1)**

The cereals and cereal like grains has been cultivated since prehistory. Nearly, one-half of the energy and more than two-fifths of the world's protein intake comes from consumption of cereal foods. Out of the total cereal production, 50% is used as for food and 35% in animal feed, with the balance distributed between industrial processing, seeding, other uses and waste. Cereals are a major source of starch and dietary fiber in our diets and they convey health benefits. The availability of a diverse array of grain types and properties of each cereal has allowed the production of a seemingly limitless number of food products. Cereal grains have evolved over the centuries primarily to enhance yield, disease resistance and quality both through traditional breeding programs and more recently through genetic manipulations. With regard to composition and quality, the emphasis has been to improve the key components, protein and starch, however, less attention has been paid to secondary substances such as phenolics and dietary fiber, partly because of lack of knowledge regarding their function in plant protection and in promoting human health. Nevertheless, carbohydrate polymers also play a part here amongst the non-starch components.

Numerous claims have been made over the years for therapeutic properties of ancient grains, and they are used in alternative and folk medicine for the treatment of a wide range of problems. The beneficial health properties of whole grain are accepted widely and recognized. The primary candidate components for the health-promoting and disease-risk-reducing properties of whole grain products are antioxidants and dietary fiber including slowly digested and resistant starch. The term specialty grains is usually applied to grains that exhibit some unique characteristic and are currently produced on a marginal scale for a particular end-use or market.

The size of the specialty grain market is small, but has the potential to grow and this is driven, at least in part, by consumer perception that the products answer the demand for safer and healthier foods. Further expansion of the market depends strongly on availability of product, consistency of quality, and price, since despite specialty appeal, these grains have to compete with mainstream commercial grains.

This book provides a single source of information on numerous specialty grains that have been finding new niche markets in recent years. The grains are described in terms of history, genetic background, agronomic needs, uses, health aspects and marketability. The role of specialty grain production in maintaining agricultural diversity, protecting the environment and contributing to the safety and nutritional value of our food supply are discussed.

The book comprises reviews of wide range of grains that hold promise for specialty food markets, particularly organic, functional foods for health and nutraceuticals, moreover, chapters on more recently developed grains with unique or special properties such as waxy wheat and canary seed are also included. The other specialty grains included are spelt, einkorn, emmer, blue and purple grains, hullless oat, hullless barley, low- and high-viscosity rye, amaranth, buckwheat and organic grains. The special feature of each grain in terms of genetic background, composition and structure are emphasized and discussed in relation to both current and potential uses. Health aspects and market values are also highlighted.

The fact and fiction about cereal grains is discussed in one chapter. The production of many of the specialty grains described in this book is related to the rapidly increasing interest in organically grown produce, which in turn is at least partly associated with public concern. The separate chapter on organic grains and products has been included which addresses the issues of safety, technical quality, nutritional value, consumer interest and perceptions. The health claims of specialty grains are discussed in a concluding chapter.

This book will be particularly useful to cereal and baking industry, as pressures continue to develop to produce food perceived as healthier, safer and more environmentally friendly. This would be useful resource for all the persons involved in the food processing technology particularly grain industry from the farmer to the informed consumer and will contribute significantly to the development of market for specialty grains.

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Available online 5 July 2005

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doi:10.1016/j.carbpol.2005.05.005