

Advanced Dietary Fibre Technology

Edited by Barry V. McCleary
and Leon Prosky

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Dedication

This book is dedicated to Angela Kennedy, Business Director of Megazyme International, Ireland Limited and ICC National Delegate for Ireland. Angela organised and planned the conference 'Dietary Fibre – 2000' from which the seeds of this book were planted. The manner in which Angela accomplished the various tasks was exceptional, and those scientists who were fortunate enough to attend will remember the conference as a first-class event, both scientifically and socially.

Preface

Although the laxative effects of dietary roughage have been known for more than 2000 years, it is only during the past 25 years that roughage – now termed ‘dietary fibre’ – has been accorded the scientific importance that it deserves. We are indeed indebted to T.L. Cleave, D.P. Burkitt, H. Trowell, A.R.P. Walker, J. and W. Kellogg, D.A.T. Southgate, M.A. Eastwood and the many others investigators who contributed to the science and the popularisation of dietary fibre as a vital constituent of the diet.

To many people, dietary fibre is considered a nutrient along with protein, fat, carbohydrate, minerals and vitamins in the diet. The contributors to this volume, from 26 countries, have pushed dietary fibre research forward to a new plateau, discussing: (1) the analytical methodology associated with the measurement of dietary fibre, including standards for the enzymes used in the measurement of fibre and a new updated definition/description; (2) plant breeding to improve the dietary fibre content of foods; (3) the various sources of dietary fibre and the food products that lend themselves to supplementation with dietary fibre. There are also chapters on: (4) resistant starch, which should be considered as fibre; (5) the metabolism of dietary fibre; (6) enzymes and the processing of fibre; (7) new products which do not measure as dietary fibre in the accepted methods, but which act as fibre physiologically; and finally (8) the nutrition of dietary fibre and how it impacts on population in several countries.

Recently, following a year-and-a-half of deliberations with many scientific societies and individual scientists, the Board of Directors of the American Association of Cereal Chemists (AACC) approved a new definition/description of dietary fibre. The definition includes several foods which do not measure as dietary fibre in the AOAC method, and also attaches physiological effects aside from laxative properties. The AACC’s approved definition is ‘Dietary fiber is the edible parts of plants or analogous carbohydrates that are resistant to digestion and absorption in the human small intestine with complete or partial fermentation in the large intestine. Dietary fiber includes polysaccharides, oligosaccharides, lignin, and associated plant substances. Dietary fibers promote beneficial physiological effects including laxation, and/or blood cholesterol attenuation, and/or blood glucose attenuation.’ This is just one instance of the timeliness of this book. Another example is the approval of AOAC methods for inulin and oligofructose and, polydextrose, with the AOAC currently considering methods for Fibersol-2 (a resistant maltodextrin) and galacto-oligosaccharides. These all come under the umbrella of the newer definition of dietary fibre.

We would like to thank the supporters of the conference, who helped in many ways to make the conference successful. A special thanks goes out to An Taoiseach (Prime Minister) Mr Bertie Ahern, T.D., who took time from his busy schedule to welcome the delegates and tell them of the importance of nutrition, foods and dietary fibre to the health concerns of the community. We thank the staff of Megazyme International Ireland for their efficient running of all aspects of the meeting ‘Dietary Fibre – 2000’. We also thank the contributors to this conference for their excellent papers, and the other participants in the conference for their

enlightening participation in the question and answer discussions of the presentations. We also thank the scientists from the many countries who presented their talks in poster sessions. These posters were of the highest quality and were very well attended.

Finally, we would like particularly to thank the Official Scientific Associations that sponsored the conference, and the companies that financially supported the conference. These associations and companies are listed below.

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