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PREFACE

Under the Ninth Malaysian Plan (2006 – 2010), the agricultural sector has been recognized as the third engine of growth, and will continue to provide the raw materials required by the domestic agro-based industries for the nation's food demand. The food commodities subsector is expected to grow at 7.6% per annum through improvement in efficiency and productivity, particularly to reach the target of self-sufficiency. One of the key successes in achieving this goal is to strengthen research and development as well as commercialize research findings through networking and collaboration between Research and Development (R&D) institutions, local universities and private sectors. The production of safe and wholesome foods require considerable research before they are finally placed on the shelves. The rationalisation of research and development outputs will enable a progressive transfer of scientific or technical knowledge in order to produce new or substantially improved processes and food products, and exploitation of the technology for the benefit of industry and the general public. The Malaysian government has continuously funded enormous amount of cutting edge research in food science and technology to provide direction to the policy makers, regulators and industry and gear towards improving the quality of life.

In view of the multi-disciplinary nature and continuing fast development in the science and technology of food, a national conference on food science and nutrition was held in 2006 at Universiti Malaysia Sabah, Kota Kinabalu. The idea of putting down findings into a book came from the overwhelming turnout of participants and exciting and stimulating discussion during the conference. Therefore, we strongly feel that it will be incomplete if the information presented and the constructive discussions are not shared with a wider audience who may have been interested but were unable to attend the conference. Selected papers presented during the conference were peer-reviewed and revised to form the backbone of this book. The book is intended to provide updates and discussions on a wide range of issues that are relevant to the R&D activities in food science and technology from different disciplinary viewpoints. The authors drawn from academia and research institutions, are acknowledged as experts in their respective fields. Their contributions make this book unique reading material as it highlights the progress of food science and technology in the country.

The book is organised into four distinct parts according to the nature of the research clusters. Part 1 with five chapters covers product development and characterization. The objective is to provide an update on the current research done by local food scientists to magically transform their innovative ideas into tangible food products. This includes product innovation from durian, characterisation of reduced fat mayonnaise and banana starch, incorporation of *carrageenan* into *keropok lekor* (a popular snack in Malaysia) and the potential of using pumpkin flour in making buns.

Part 2 comprises six chapters, specifically devoted to studies associated with functional properties of food products and ingredients. Topics covered in this section are biological properties of Malaysian seaweeds and wild edible mushrooms, glycemic properties of cake made from locally available flours, effect of prebiotics in milk chocolate and survival of probiotics in commercially fermented milks. Information provided in this section is timely as new products with functional claims are increasingly appearing in the markets.

Part 3 focuses on quality and safety of food processing and is classified into six chapters. In anticipation of increasing concern about food safety, numerous studies have been conducted to improve food production in the country. The chemical and microbiological dynamics of two indigenous fermentation processes in Malaysia (*budu* and *bambangan*) are discussed in this section. The results of chemical risk assessment of freshwater aquaculture fish and contamination of residual from polystyrene food packaging are also reported. Other topics covered are physical and antimicrobial of lemongrass oil incorporated in edible film and the effect of fractionation temperature on the composition of palm oil and sunflower oil blends.

Nutritional problems in communities range from obesity to nutrient deficiencies and food insecurity from family units to governments. The causes of poor nutrition are multiple and complex, involving biological, economic, social, cultural, and policy issues. The update of R&D work on this important field is covered in Part 4. The topics discussed are iodine deficiency among schoolchildren in the interior areas, consumption patterns of herbal supplements and under-reporting of energy intake.

Since the book conveys collated practical information from research, it should be a useful reference material for researchers, academicians and postgraduate students. The book should also be helpful for food industry

personnel engaged in R&D work. The editors hope that the readers of this book will get a broad overview of the relevant principles, methods, issues and concerns in food science and technology. We acknowledge the contribution of all authors who have made this book a reality. The valuable comments and suggestions made by the professional reviewers are highly appreciated. Special thanks to our postgraduate student, Sim who helped in corresponding with authors to get the manuscript together promptly. Finally, thanks to Penerbit Universiti Malaysia Sabah for publishing this book.

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