Preface

The rate of technological change in the feeds industry over the last two decades has been impressive. There have been significant advances in analytical chemistry and the development of bioassays to allow better characterisation of diverse feedstuffs. Further, our understanding of the often complex interactions among food and nutrient intakes, digestion, metabolism and growth and the effects of factors such as animal genotype, disease and the social and thermal environment, has increased and has been greatly aided by the development of animal growth simulation models. Computerised growth simulation models used in conjunction with linear programming allow a more dynamic and situation-specific approach to determining nutrient requirements. Also, the biotechnology industry has offered the animal and feeds industries new opportunities, with the development of innovative products such as enzymes, pre- and pro-biotics, acidulants, flavours, peptides, anti-oxidants, novel feed ingredients and growth promotants. Processing technologies have also advanced. Such advancement in knowledge and technology allows for a better formulation of diets for pigs and poultry, to maximise productive efficiency and to minimise the loss of nutrients via excretion. In the case of pet food manufacture, diets can be formulated and products developed with enhanced palatability and nutritional value to assist in maintaining health and promoting longevity.

This text aims to review the fundamental concepts relevant to the nutrition of monogastric animals and to provide an update on recent advances in the area. The book is a collection of papers from material presented at an international postgraduate PHLO-seminar on feed evaluation science, led by Wageningen and Massey Universities.

In the course of sixteen chapters, aspects of chemical composition, nutrient utilisation and the description of bioavailability are covered. The principles of dietary formulation are reviewed and placed in the context of the computerised simulation of growth processes. Finally, an overview is given of recent advances in feed evaluation for pigs, poultry and companion animals. The text is intended for feed formulators, nutritionists, research scientists and other professionals with an interest in formulating diets for simple-stomached mammals and birds.

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