ADVANCES IN EXTRUSION TECHNOLOGY

AQUACULTURE/ANIMAL FEEDS AND FOODS

EDITED BY
YOON KIL CHANG
SHAW S. WANG

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AQUACULTURE/ANIMAL FEEDS AND FOODS

Proceedings of the International Symposium on Animal and Aquaculture Feedstuffs by Extrusion Technology and the International Seminar on Advanced Extrusion Technology in Food Applications

March 9–14, 1998
Áquas de Lindóia, São Paulo, Brazil

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Preface

Extrusion cooking has been used in industries for many years to produce various types of human foods and animal feeds. Its application to the production of aquaculture feeds has been more recent. With the advent of large scale and intense aquaculture of fishes and crustaceans, the applications of the technology or even "art" of extrusion have met another level of challenge. Tailoring toward the specific needs of different aquafeeds, the manufacturers have to design feeds with different floatabilities to suit the top or bottom feeders, feeds with durability in terms of physical and chemical integrity, feeds with the "right" bite sizes, etc. The specific nutritional demands may require specific extruder feed formulations and extrusion conditions to make sure of the smooth deliveries of the nutrients to the animals.

The papers collected in this book were those presented in the International Symposium on Animal and Aquaculture Feedstuffs by Extrusion Technology (March 9–12, 1998), and the International Seminar on Advanced Extrusion Technology in Food Applications (March 13–14, 1998). Both meetings were held in Áquas de Lindóia, SP, Brazil. We brought together academicians, food and feed producers and extruder manufacturers to deliberate on integrated considerations on proper extruder designs, optimum extrusion process designs and desirable extrudate productions. The extrudate, foods or feeds, need to satisfy the consumers' demands in terms of palatabilities and nutritional requirements. Process and machine designs and ingredient formulations need to be integrated into a holistic way of feed and food productions.

The topics ranged from selections of machine construction materials to the use of microbial biomass as feeds, from fundamental theories of starch extrusion cooking to producing corn flakes by extrusion instead of conventional flaking process, and from total quality control of the extrusion process to specific nutritional and/or organolytic requirements in the foods and/or feeds.

The book contains two parts. Part I concentrates on the productions of aquaculture and animal feeds and Part II on the advances in extrusion productions of foods.

The editors would like to thank the contributors for the high levels of discussions and presentations in the conferences and for the timely preparations of the articles for the publication of this book. We are confident that this book, with its relevant scientific

knowledge, will contribute to the continuing developments of extrusion technology and for the production of foods and feeds.

DR. YOON KIL CHANG
DR. SHAW S. WANG

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